# MOTOR AGE

Vol. XXIX
No. 2

CHICAGO, JANUARY 13, 1916

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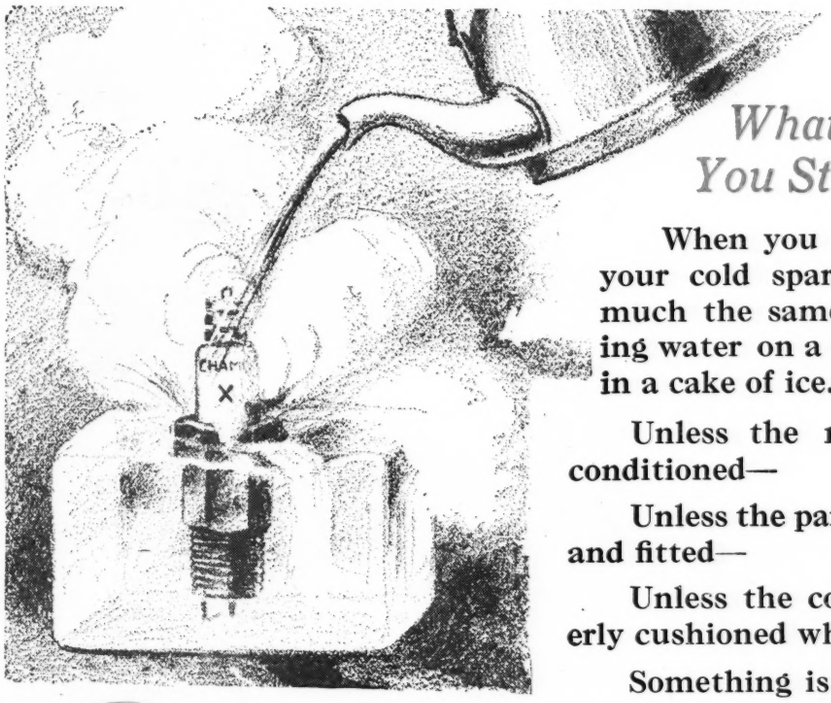

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"TOLEDO MADE FOR THE WHOLE WORLD'S TRADE"

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## Mark the Wonderful Supremacy of the

# Hudson Super-Six

HUDSON SUPER SIX TRADE NAME REG.

**$1375 at Detroit**

Patented by Hudson
December 28, 1915
Patent No. 1165861

## Eights and Twelves Defeated by a Six

THE facts about the Super-Six seem almost like fiction.

Think of increasing motor efficiency 80 per cent at one jump without adding size or cylinders.

Think of a small, light Six—cylinders 3½x5—developing 76 horsepower.

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Think of a simple, light-weight Six outmatching Eights and Twelves.

And think of a $1375 car proving itself, beyond possible question, the best performing car of the day.

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Five Other Body Styles
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Two laps made at 76.75 miles per hour.

***Standing start to 50 miles per hour in 16.2 sec.*** A new record in quick acceleration.

# MOTOR AGE

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**Next Week will be the Chicago Show Issue of Motor Age, which will contain a complete resume of the accessory field for 1916 in addition to numerous other features of the pre-show character.**


LARGE and long continued results from small and spasmodic advertising cannot be expected.

Your advertising must be considered as one of the indispensable everyday tools of business —just as your factory, its machinery and its workmen—your representatives, jobbers and dealers — your office force and your salesmen — are necessary tools which must work **regularly** for you to prove continuously productive. Not on the job one or two weeks in the year, mark you, but every week — not in 1916 only, but unremittingly.

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—Says

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Vol. XXIX, No. 2 Chicago, January 13, 1916 $3.00 Per Year

MOTOR AGE

*Flotilla of three-ton trucks, made by Diatto and awaiting delivery to the Italian army*

# Italy Builds Motor Trucks to the Roll of Martial Drums

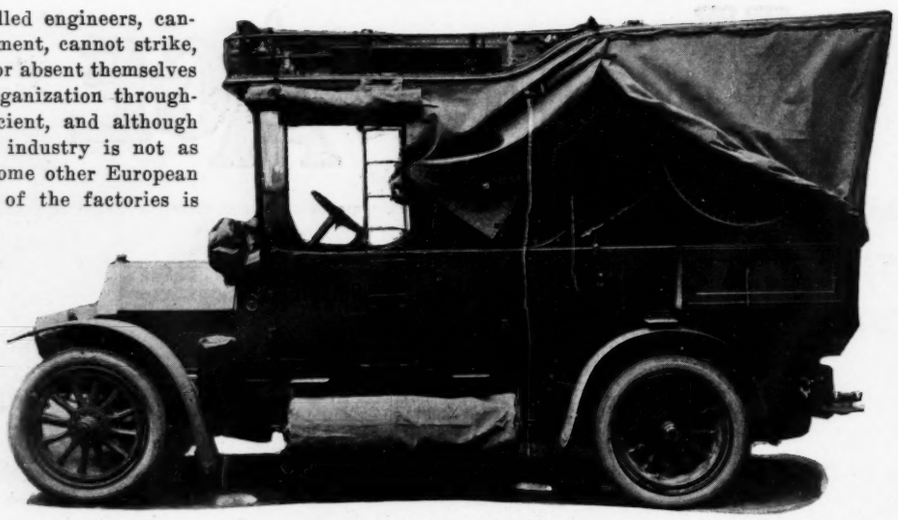
by W. F. Bradley

TURIN, Italy, Dec. 30—Compared with other European countries it has been possible to visit, Italy bears few external indications of a state of war. When the rigorous frontier formalities have been attended to, the visitor finds himself among a people who have suffered neither the depression of an invasion nor the exhaustion of a long and undecided campaign. Alone among Continental countries, Italy has imposed no restrictions on motoring, and with the exception of the frontier strip, puts no obstacle in the way of free movement of natives and visitors. Conscripts march to barracks behind a brass band; young recruits celebrate their last night as civilians with music and dancing; there is enthusiasm in the air, confidence among the people and not sufficient pinch to make even the poor dissatisfied. Here war is not Hell.

Coming into the war 9 months after her neighbors, the Italian motor car industry has been affected quite differently from that of England and France. The lengthy preliminary warning made it possible for the industry to prepare for the war boom and to avoid many of the inconveniences of disturbed markets in a way that was not possible with the neighbors suddenly plunged into an unexpected conflict. The Italian factories have the Italian government as their chief client, and are producing for that client trucks, touring cars, tractors and aeroplane motors. The only change that has taken place is the transference of trucks to the primary position and touring cars to a secondary place. There has been no necessity to transform the internal organization of the factories to produce shells and other war material.

Every motor car factory in Italy is under government control. Army officers are to be found in all the shops, and a badge on the arm of many of the workmen and foremen indicate that they are under military restrictions. Such men, whether they

be day laborers or skilled engineers, cannot leave their employment, cannot strike, cannot run short time, or absent themselves without leave. The organization throughout is remarkably efficient, and although the Italian motor car industry is not as important as that of some other European countries, the quality of the factories is certainly the best. Extensions are the order everywhere. There are very few factories in which building operations are not being carried out; this work is being done in a very systematic manner, and as the extensions are made with a view to the increased output of the ordinary product, there is no confusion and no disorganization.

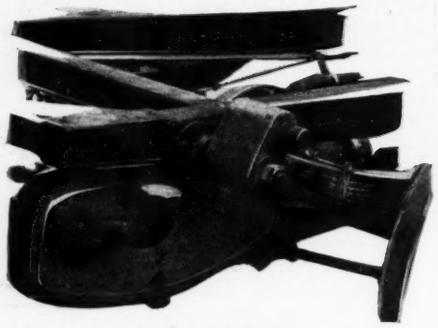


*Fiat motor car searchlight built for Italian army*

**Trade Demands Motor Trucks**

One of the effects of the war has been to stimulate the demand for motor trucks among business firms. Up to a year ago, the number of business trucks in Italy was not very great, but as the quantity of horses decreased and as the war furnished examples of the utility of trucks, a demand sprang up among business houses that the home factories have been able to meet. Prior to the war Italy's speciality was touring car chassis, a comparatively small amount of truck business being done, and most of this was for abroad. The war has made it necessary for everybody to study trucks, with results that are not always quite satisfactory. There is too much adherence to touring car design and too much adaptation of touring car models to truck work.

With a 700-mile front, it is obvious that the Italian army must make a very extensive use of motor trucks. Prior to the war, Fiat was the only firm producing trucks in big quantities and although all other firms have devoted their attention to army vehicles, Fiats still predominate. Their output is sufficient to supply the Italian army and leave a surplus for England, France, Belgium and Russia. The largest type used in the Italian army is a 4-ton truck, which is, of course, of special design; the smallest are 1-ton trucks on pneumatic tires, generally with twin tires on the rear wheels. All Fiat trucks of 2-ton capacity and upwards have enclosed chain drive; Spa, another big maker of trucks, also uses enclosed chains for final drive. Scat, the only other firm specializing in trucks, uses internal gear drive. These three firms are the only ones having paid really serious attention to truck design before the war, and building a truck which is not a touring car development.



*Rear spring shackles on Lancia 2-ton chassis*

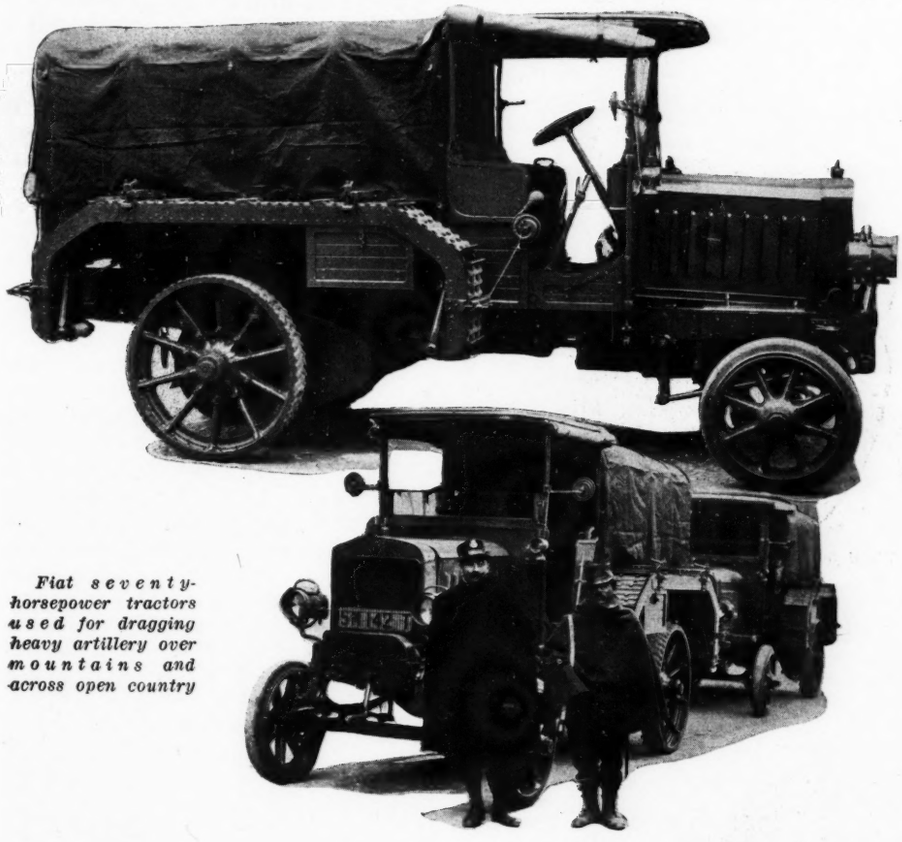
These firms, as well as all the others in

*Fleet of seventy-horsepower military tractors in assembly shop of the Fiat factory*

Italy, are building shaft and bevel-drive trucks of 1, 1½ and 2-ton capacity, which are really nothing more than heavy touring cars. The greater proportion of these trucks are equipped with pneumatic tires, singles on the front wheels and twins on the rear. No European army employs such a proportion of pneumatic tired trucks as the Italian. The explanation is that the authorities wished to make use of trucks built in the country, and it was quicker for the manufacturers to fit a special rear axle and strengthen up the touring chassis generally, equipping it with twin pneumatics, than to get out special truck designs. It is certain that the arrangement is not the most economical, for all the Italian trucks are driven too fast and tire upkeep must be enormous.

**Disk Wheels Are Common**

One of the distinctive features of Italian construction is the use of disk wheels for trucks up to 2-ton load. These wheels are detachable by unscrewing five or six nuts,

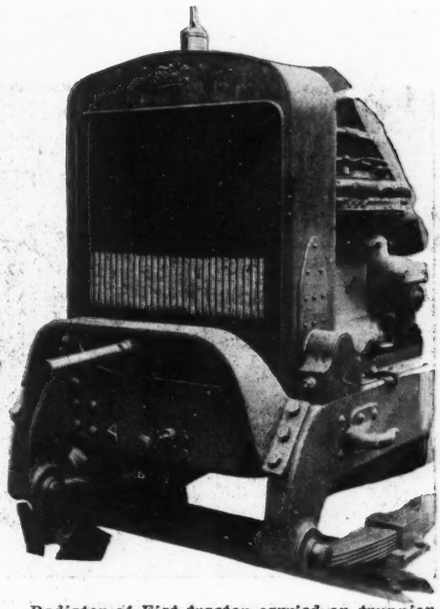


*Fiat seventy-horsepower tractors used for dragging heavy artillery over mountains and across open country*

and are very easy and cheap to construct, for they consist merely of a stamped steel disk rivetted and welded to a steel rim. The same type of wheel has been put on the market in France by Michelin, and is being used to a moderate extent for touring cars, but very little for trucks. In Italy, on the other hand, the disk wheel is used on all Fiat light trucks, this firm manufacturing them in its own shops, and on about 80 per cent of the entire Italian output of trucks up to 2-ton capacity. Cast steel wheels are almost exclusively employed for the heavier trucks, although the high price of the castings at the present time—about 17 cents per pound—has caused some attention to be paid to wood wheels. It is found, however, that there is very little saving in price.

It appears to be a general practice for the Italian makers to use close-grained cast iron instead of aluminum for their heavy truck motors. This is done by both Fiat and Spa. This latter firm does not use paper gaskets at the base of cylinders and between crankchamber and oil pan. The surfaces are so finely ground that they can be put together without any joint between them, and there is absolutely no oil leakage. This is done on trucks as well as on touring cars. The interiors of cast iron crank chambers are painted as a protection against rust.

There appear to be no four-wheel drive tractors in Italy; at any rate none are being made by the Italian manufacturers. Heavy gasoline tractors, intended to operate away from made roads, and designed primarily for the haulage of heavy artillery, are being produced by several firms, notably Fiat, Isotta-Frascini, and Spa, and are claimed to give results equal to those obtained with the all-wheel drive type. The Fiat tractor is a chain-driven machine with 70-horsepower motor under a hood, four-speed gearbox, jackshaft and encased chains driving large diameter cast steel wheels with ribbed faces. Front wheels are fitted with Goodrich single band tires. The motor, which has a bore and stroke of 5.1 by 7.8 inches is L-type with cylinders cast in pairs, and is the only non-monoblock casting seen in Italy. Except for the pair casting it does not differ appre-

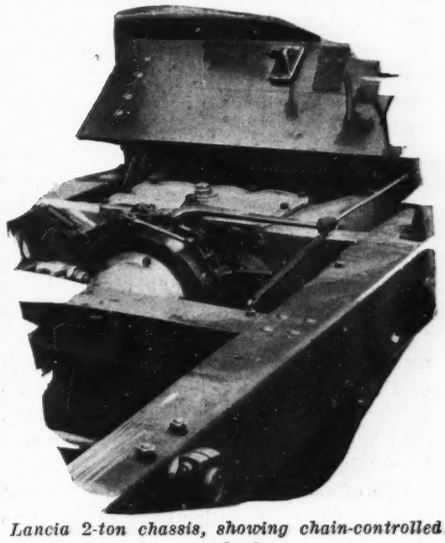


*Radiator of Fiat tractor carried on trunnion. Note steam whistle on filler cap and long cranking handle, the latter designed to permit three men to turn over motor*

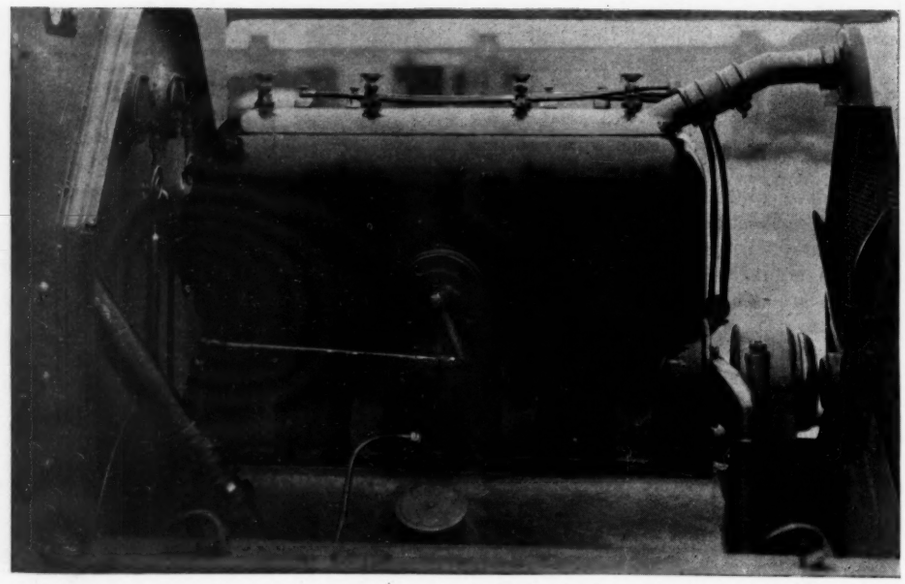
ciably from Fiat truck motors. It is carried on a sub-frame and has half compression device which automatically retards the magneto, the advance being given with full compression and remaining fixed. On a cold morning it is not likely to be an easy matter to start a motor of these dimensions, and in consequence the starting handle is made of sufficient length for three men to get hold of it. The position of the water pump is somewhat distinctive on the right-hand side of the motor, in a central position, with an inlet pipe to each group of cylinders. The magneto is immediately to the rear of the pump and driven off the same shaft. The gilled tube radiator is mounted in trunnions, and has a whistle in the filler cap, so as to give warning to the driver if steam begins to form.

**Chassis Is Rigidly Built**

A very rigid chassis construction is obtained by closely placed cross members and gussets. Between the motor and gearbox is a cast iron housing attached direct



*Lancia 2-ton chassis, showing chain-controlled foot brake*



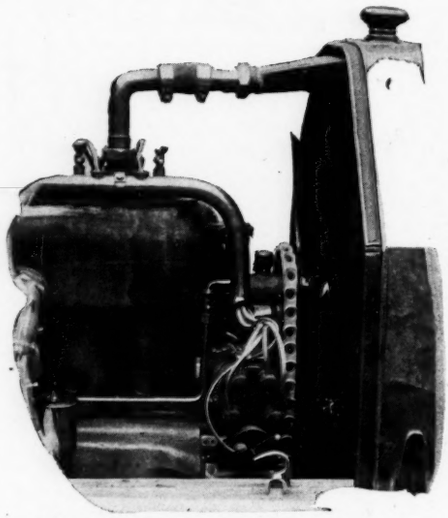
*Spa heavy tractor motor, a good example of Italian cylinder casting. The water pump is inside the cylinder casting*

to frame members, containing the gear shifter mechanism, the brake control, and silent chain drive from main shaft to the winch shaft running alongside the left-hand frame member. It is by means of a dog-clutch, operated by the change speed lever, that the driving chain can be put into motion, all the gears then being locked in neutral.

**Other Fiat Tractor Details**

The winch is mounted horizontally within the rear of the chassis and has about 50 yards of ½-inch steel cable. There are guides on the chassis to allow the cable to be brought forward for hauling a vehicle in front without touching any of the mechanism. A differential lock is fitted; there are two water-cooled brakes on the jackshaft and on the rear wheels. The jackshaft brakes are operated together by pedal through a balance lever, but have a special mechanism by which they can be applied separately when going around sharp mountain turns. The chain cases are a stout casting, with sheet metal facing, having the radius rods combined with them and capable of taking the weight of the vehicle if the road wheels sink in soft ground. All shackle pins are of big diameter and are bronze bushed. The rear spring shackles have a big oil reservoir cast with them, so that lubricant is automatically fed to the shackle pins. Spring clips are not often used on Italian trucks. Instead, the springs have a groove down their full length, to prevent them playing sideways, and are assembled by being forced into a forged box, which is bolted to the spring seating on the axles. This does away with the center bolt and by reason of the bigger surface holds the leaves together more effectively than a single bolt. Scat has extended this idea to touring cars by putting the springs through the axle.

One of the patented features of the Fiat tractor is the caterpillar band attached to the driving wheels. When working under

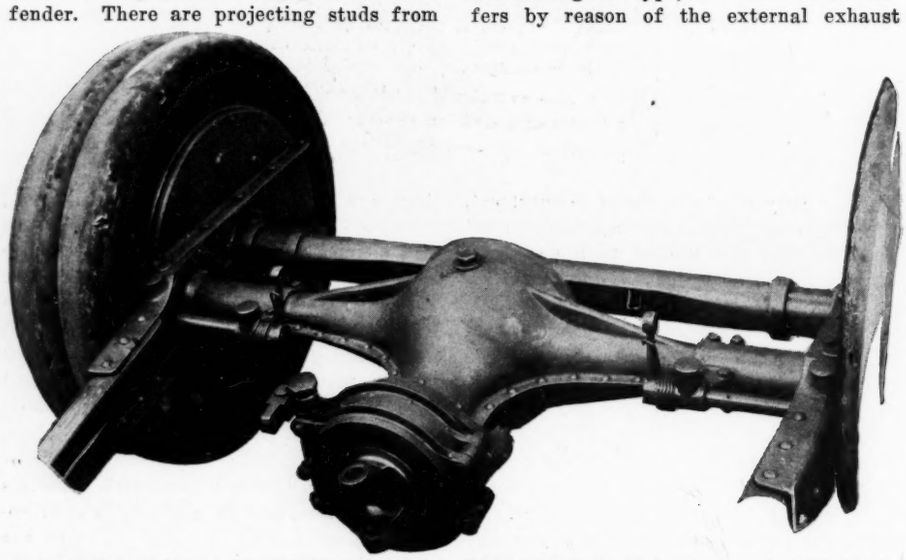


*Wood fan, made by specialist in aeroplane propellers, on Lancia armored car*

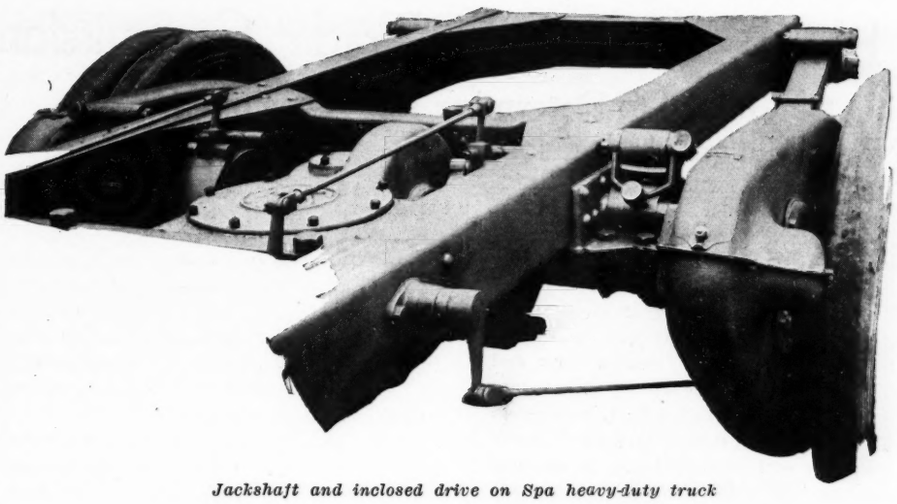
normal conditions, these bands are carried on a kind of platform forming a rear wheel fender. There are projecting studs from the inner face of the rear wheels, by means of which the bands are attached to the wheels. By means of these bands the tractor is able to operate across country and, it is claimed, can haul loads into positions inaccessible to the rubber-tired four-wheel drive tractor. The tractor carries a usual load of 5 to 6 tons, and can haul a load of 20 tons up a 6 per cent gradient without bands on the rear wheels. On a 12 per cent gradient it can haul 10 tons. With the bands fitted to the rear wheels, a load of 100 tons can be hauled over level roads, 35 to 40 tons on a 12 per cent gradient, and 20 to 25 tons on a 15 per cent gradient. The tractor alone weighs a little more than 12 tons and will climb a 30 per cent gradient. These machines were under test for a long time on Alpine roads and are now being used very extensively by the Italian army in their mountain operations against the Austrians.

**Spa Building Artillery Wagons**

Spa is building a very heavy short-wheelbase chassis designed to carry a 6-inch gun. The fitting of the gun is undertaken by the Italian artillery department, and particulars are not for publication. It is understood that jacks are fitted to the chassis, so that all load is taken off the springs when the gun is fired. This is doubtless somewhat similar to the system adopted by the French artillery for the 75-millimeter guns. The Spa chassis is driven by a slow speed monoblock motor of 3.7 by 7.8 inches bore and stroke. This is one of the most compact and neatest truck motors ever produced. The water pump is within the cylinder casting, fan and pump being driven off the same shaft. There is no intake manifold, for the throttle is inside the casting, only the float chamber being external. The magneto, a Splitdorf, is mounted on the valve side, just to the rear of the timing gear housing, where it does not interfere with the accessibility of the valve stems. Lubrication is under pressure to all parts, including the wrist pin. Although similar in external appearance to the touring car type, the truck motor differs by reason of the external exhaust



*Internal gear-drive axle of Scat 4-ton truck. Note foot brake back of rear universal joint*



*Jackshaft and inclosed drive on Spa heavy-duty truck*

manifold, cast iron instead of aluminum for crankchamber, and the lower number of revolutions at which it is designed to run. Transmission is through four-speed gearbox to jackshaft, with double water-cooled brakes mounted on it, and final drive by enclosed side chains.

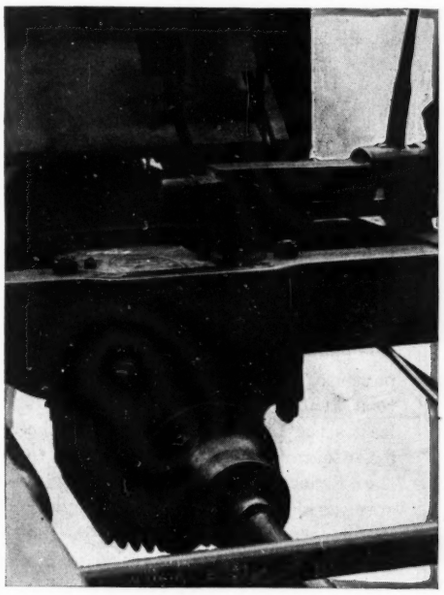
A large number of special vehicles for military operations are being produced by the Italian factories. Fiat is building a number of searchlights carried on a 2-ton chassis using pneumatic tires. The dynamo is mounted over the gearbox and driven by enclosed silent chain. The searchlight, which has a face diameter of 35 inches, is mounted on a wire wheel bogey. It is brought out of the car on rails and can operate several hundred yards from the generating car. A similar type of chassis is employed for wireless telegraphy.

**Use Motor Fuel Wagons**

The English and French methods of carrying gasoline is by means of 2-gallon cans. The Italians are making use of tank wagons, with pump and measuring instrument mounted on the rear end of the tank, this proving a much more economical and satisfactory manner of handling gasoline than the use of cans. Armored cars, generally fitted with two machine guns, are being produced in moderately large quantities for the Italian and other armies. The armor plating is chrome nickle steel, 5 millimeters thick and capable of turning a rifle bullet at close range. Practically all these cars have twin pneumatic tires on the rear, with a housing around them brought as low as possible compatible with clearance. In some cases band tires are fitted on the front wheels without any protection, the wheels being either cast steel or steel disk type. Other special machines are motor workshops, aeroplane tenders and aeroplane car trailers.

Hundreds of light cars are being used by officers for runabout purposes. Bianchi has had to give up practically the whole of its production of 10-horsepower two-seaters for army requirements.

Before the war Italy did not possess a great number of motor car drivers, for practically her entire motor fleet consisted of passenger cars. Thus, since the army has put into service several thousands of motors, it has been necessary to train drivers for them, with the result that more or less green men have been in charge of military material. The situation, however, has not been as difficult as in England and France, where there is in addition to the military fleet a very important commercial motor fleet for which drivers are found with difficulty.



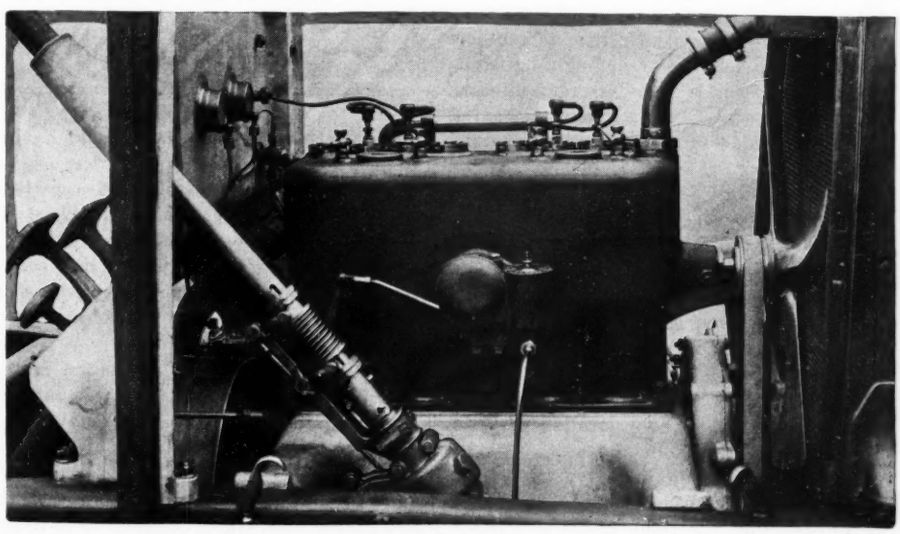
*Scat 4-ton truck, showing undivided gearbox and cooling ribs, which are found advantageous when 12-mile hills have to be made on low gear*

**Private Cars for Army**

When war broke out the Italian military authorities requisitioned practically all private cars. This part of the Italian military organization does not appear to have been managed in a very satisfactory manner. It is declared that the officers alone were judge of the value of a car, with the result that in some cases a fancy price would be paid, and in others the owner would get much less than the real value of his machine. Experience has shown that the best scheme is that in force in France, where the impressment officers have to work to a definite scale, based on the number of cylinders, horsepower, age, type of body, nature of tires, etc. Under this scheme the owner is at a disadvantage if his car has just come out of the factory or has just been completely overhauled.

## TIRES SCARCE IN HOLLAND

Paris, Dec. 23—Travelers from Holland report that England's tire blockade is so tight that only the minimum number of tires necessary for public service are allowed to pass into Dutch territory. Motor car owners are not allowed to have new tires until they have returned their old casings and tubes, even though they are unfit for any further service. Notwithstanding the severity of the control and the heavy fines imposed, smugglers make repeated attempts to get rubber across the frontier into Germany. The market price of rubber in Holland is at present about $1.60 per pound. The penalty for those caught in the act of smuggling is $6.40 a pound; but as German agents are willing to pay $10 a pound for all rubber brought across the frontier, smuggling is a profitable, though dangerous, occupation.



*Motor of the Scat 2-ton truck in which water header is an integral part of cylinder casting*

# Gas Price Quiz in Hands of Federal Trade Commission

## Investigations Are Being Conducted to Determine Whether High Rate Now Charged Is Reasonable

WASHINGTON, D. C., Jan. 11—The latest development in the gasoline situation is the announcement by the Federal Trade Commission that it will handle exclusively investigations to determine the reasons for the high cost of gasoline. Several investigations now are being conducted by the commission to gather data which will enable it to tell whether the present high prices are reasonable.

In addition, the commission is attempting to handle a number of complaints from all parts of the country charging discrimination in the price of gasoline. These matters are being handled directly by Commissioner Harris. The first complaints and the greater number of them came from the south and before Congress convened, Commissioner Harris and a corps of assistants had gone to the southern states to make an investigation of the violations of the so-called Clayton act.

This side of the gasoline price problem is considered by the commission to be a comparatively simple one compared with the investigations to determine whether the price charged is reasonable. Whether the commission will give hearings on the price discrimination phase of the problem has not yet been determined, but it seems probable that it will.

**Has Much Information**

Much information on which the commission could base a decision as to whether the price of gasoline is already too high is in the hands of that body, having been collected by the Interstate Commerce Commission and the bureau of corporations. This information includes a report on conditions in the Healdton oil fields recently issued by the trade commission, the report of the Interstate Commerce Commission covering the cost of pipeline construction and transportation problems in the eastern field.

The only matter which the commission then needs to help it in reaching a decision, it is announced, is data on refining and marketing costs. Many questions enter into the consideration of the latter problem, including the determination as to whether more crude oil is being produced now than last year or in previous years, whether the oil is productive of gasoline as oil taken in former years and other related problems. The question of the labor cost, as well as depreciation of machinery used in the refining, also must be taken into consideration, it is pointed out.

Notice of the commission's determination to handle the whole gasoline problem was given in the following statement issued by the body today:

"The federal trade commission today announced that the Department of Justice was referring to it for investigation complaints received by the department having to do with the increase in the prices of gasoline. Before this session of Congress, the Department of Justice inquired of the Federal Trade Commission whether it were conducting investigations into conditions in the petroleum and oil trade, stating that if so it would refer these matters to it for attention.

"The Federal Trade Commission stated that it had been conducting these investigations pursuant to congressional direction, under the resolutions of Senator Gore, Senator Owen and Senator Chilton and that it would be pleased to investigate any of the complaints referred to it if the Department of Justice so desired. The Federal Trade Commission and the Department of Justice are keeping closely in touch on the matter."

Replying to the Steenerson resolution, calling upon the Department of Justice for information as to any action on the high price of gasoline, Attorney General Gregory has sent the following communication to Congressman Webb, chairman of the house judiciary committee:

"No prosecutions have been instituted by the government based on the increase in price of petroleum and its products, for the reason that no evidence has been developed to justify a charge that the increase is due to any action in violation of federal law. It is the duty of the United States district attorneys and investigators throughout the country, to scrutinize closely all increases in the prices of stable commodities and to report promptly any evidence tending to show that such increases were brought about by agreement or combination. This duty has been particularly impressed upon them since the beginning of the European war, which has made it easier to find pretext for increasing prices."

The communication says that no investigation has been organized by the Department of Justice on the price of gasoline because the Federal Trade Commission covers that subject.

**Adverse Report Made**

Washington, D. C., Jan. 11—Special telegram—Representatve Carlin presented an adverse report from house judiciary committee on Steenerson resolution for inquiry into the rise of cost of gasoline on the ground that the attorney general answered the question fully.

### EXPLAINS HORSEPOWER TAX

WASHINGTON, D. C., Jan. 11—Secretary of Treasury McAdoo has issued following statement:

"The suggestion that a tax on the horsepower of motor cars and other internal combustion engines might be considered by the Congress seems to be misunderstood in many parts of the country. A circular just issued by the California State Automobile Association and signed D. E. Watkins, secretary, illustrates this. The circular says that a federal tax of 50 cents on the horsepower of motor cars and 1 cent per gallon on gasoline 'means to you each year nearly twice as much tax as you now pay. We now have men at Washington, fighting this bill and are badly in need of financial support. Will you not join this club and help us defeat this unjust measure? If you do not feel like you can contribute eight dollars for a membership then send us one dollar or whatever amount you will. Now is when we need your support so please give us an early response.'

"The suggested tax on the horsepower of motor cars refers entirely to a tax on the motor car before it leaves the factory to be paid by the manufacturer and paid once only to the Federal government. For instance, a car with a 20-horsepower engine would be taxed $10 in the hands of the manufacturer. No yearly taxation of motor cars, similar to the license taxes of states and municipalities, is contemplated nor has it, at any time, been suggested that a federal tax be imposed on machines already in use by private owners."

### FORTY CENT GASOLINE PREDICTED

Chicago, Jan. 10—Gasoline prices in this city have dropped to 16½ cents, nearly 2 cents. The Standard Oil Co., it is said, is responsible for the low price.

Reports from the Oklahoma and Texas oil fields state that there is an oil famine and that the oil wells in these two states have slumped in production from 35 to 50 per cent. Gasoline prices, as a result, it is predicted, will reach in the near future 40 cents a gallon and oil by-products will be 35 to 40 per cent higher than at any time in the history of the United States.

Advances of 1 cent a gallon in wholesale gasoline prices were put into effect in the entire eastern territory last week, following the advances on the Pacific coast.

The New York City price to garages is now 22 cents a gallon, which compares with a price of 12 cents on March 31 last. The same schedule is effective for Standard Oil of New York territory in Long Island and Connecticut.

# New Crossing Guard

HORATIUS at the bridge has a modern rival in the 1916 model of railroad crossing guard that was introduced to Chicago motorists this week by the Chicago and North-Western railroad, pioneer in the Safety First movement, along the Milwaukee division of its system where the tracks parallel and cross many times the north shore motor road, one of the most popular highways in the vicinity of the western metropolis.

The 1916 crossing guard wears a blue uniform with brass buttons and a burnished star. He stands in the middle of the crossing when trains approach and holds in his upraised hand a white shield upon which is printed in bold, black letters "STOP." Like the traffic cop, he plays imperative symphonies upon a shrill whistle. At night he gives his danger signals with a lantern that sheds a white light which penetrates the darkness better than yellow rays of the old-style lantern.

The new guardian of the railroad crossing is a figure that commands amazement as well as obedience. He is the creation of R. H. Aishton, vice-president in charge of operation and maintenance. He succeeds the unkempt, listless individual with a square of dirty red muslin on a stick that has been guarding railroad crossings since there have been railroads.

# An Imperative Figure

Motor car accidents in Winnetka and Highland Park within a year at crossings where the gates were not lowered were proof that he was not always on the job. Most of the guards have been foreigners. Many of them tend their gardens during the day and sleep at night at the company's expense.

The new watchmen are to be of a higher class and are to be paid better. Each will have a whistle, such as is used by a traffic policeman, and a metal sign, and he must stand out on the road where he can be seen. The new list of seventeen rules for crossing watchmen even prohibits reading on duty. At the busier crossings the watchmen are to be sworn in as special policemen by the villages in which they work and they are to report all violations of their signals. It is the intention of the company to have uniformed crossing guards the length of its system eventually.

Another innovation which will come with the new watchmen will be an improvement in the painting of crossing gates to make them more noticeable. The railroad has investigated and learned that the gates which have been painted white soon become dirty and melt into their background. The gates are all to be painted with black and white diagonal stripes, somewhat similar to a barber pole, so that they will be distinct.

# Highway Monitors Provided in Safety First Campaign

THE safety first propaganda is to be carried before the Massachusetts legislature this year according to plans now being formed, and it is possible that all future motorists in the old Bay State may have to pass an examination before being allowed to drive, and there may be monitors for inspection on the highways.

Secretary of State Langtry has filed a report with the highway commission urging the appointment of from 1,000 to 1,500 persons, motorists as well as non-motorists, to act as monitors throughout the state. They will be given a badge by the commission, and authorized to warn drivers seen operating recklessly, and also report them to the commission. If a driver is reported two or three times by different monitors that will be evidence enough to cause a suspension of his license. The monitors will not have police power to make arrests.

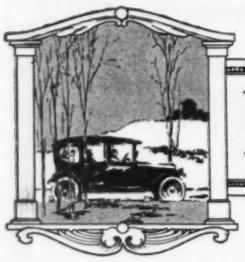
The other movement has been started by the Highway Safety League. Its secretary, Lawrence G. Brooks, has filed with the incoming legislature a bill calling for examination of all motorists as follows:

Section 1. Before granting a license to operate a motor vehicle the Highway Commission shall make an investigation into the mental, moral and physical qualifications of the applicant, such investigation to include a practical test of the applicant's ability to operate a motor vehicle and of his familiarity with the motor vehicle laws, and no license shall be issued until the commission or its authorized agent is satisfied that the applicant is a proper person to receive it. The foregoing provision shall only apply to applications for licenses made after the passage of this act.

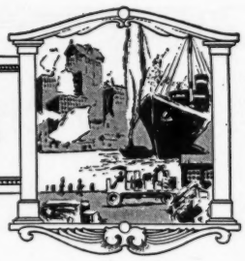
Section 2. All acts or parts of acts inconsistent herewith are hereby repealed.

Section 3. This act shall take effect upon its passage.

On top of this Boston has put into effect its ordinance compelling all pedestrians to cross the streets at crosswalks where police officers direct traffic, and there is a penalty of $20 for crossing when the officer has signaled vehicles to proceed. It went into effect just before Christmas, but on account of the shopping crowd could not be enforced, but from now on it ill be. People may cross streets where they like and when they please if there are no police on crossings, the penalty being for not obeying the officer. This is expected to go a long ways in reducing accidents in which motorists and pedestrians figure.



# EDITORIAL PERSPECTIVES



## Motor Truck Growth

LAST year was the biggest season the motor truck has enjoyed since its inception, the biggest year in point of sales and the biggest year in general development. The war gave the motor truck an advertisement it could not possibly get in any other way, while some 20,000 trucks were shipped abroad, the majority for military use, there was great expansion in the home market. The domestic demand in itself was sufficient to be a material stimulant, but this, added to the war orders, gave the industry stimulus that has put it further ahead than several years of normal growth.

MOTOR trucks are following in the path of passenger-car development in not a few respects, a suitable example being the tendency to reduce truck weight and yet retain load-carrying capacity. Just as makers of passenger cars have aimed at eliminating needless weight so have truck makers been looking to this task during the past season. Much weight has been saved in frames by a few makers adopting the more flexible form of frame design which is quite general in Europe. The flexible frame has channel-section pressed steel side members which are not so rigidly tied together by heavy cross members as has been the custom. The new frame aims to absorb the vibrations rather than to damp them out by volume of metal.

STILL another example in which truck designers are following car trends is in the more general adoption of the unit power plant, combining motor and gearset, a movement which has made very great strides in passenger and truck work during the past year. No longer is unit construction looked upon as a cheaper design, one suitable for small cars, but in the passenger car field it has been taken up by some of the big-car builders who have heretofore stood by rear axle gearsets of mounting the gearset amidship as a separate unit.

A VERY marked tendency of the year has been the great increase in enclosed rear drive, the chain losing out very materially, this tendency also reminding one of the movement in the passenger car field. The use of worm drive and internal gear drive is a major tendency of the year. Enclosed drive is much quieter, and quietness is now becoming an essential in trucks just as it has in passenger cars. It will only be a question of time before enclosed drive in trucks is as general as it is today in passenger cars.

THERE are many other trends in truck construction which indicate that the path blazoned out by the passenger car engineer is being followed by the truck engineer, particularly where basic principles involved are as suitable to one type of vehicle as the other. For example, single ignition on trucks is more general than ever before, just as it shows very substantial gain in passenger car uses. It is not so long ago that a truck maker still in existence brought out a new truck and fitted it with two magnetos to make sure that the ignition was up to par. Today it is not considered necessary by many makers to install even a dual system, but the makers are convinced that ignition specialties are so reliable that a single system is just as satisfactory as a single radiator, a single steering gear or a single clutch.

HOTCHKISS rear-axle drive, which has established itself so firmly in the passenger car field is making rapid gains in truck construction. This construction has adequate strength, simplicity and reduced weight as its chief assets for adoption. The question of reducing dead weight in the rear axle is as important in trucks as in passenger cars, and the faith in this argument is demonstrated by the more general use of Hotchkiss drive, without its radius rods and without its torque members, the springs taking care of these respective functions.

THE use of tractors with trailers is a conspicuous movement of the year. Such vehicles are becoming more common, and some of the largest construction works of the year have been carried on by tractor and trailer equipment. The load capacity has been greatly increased by tractors and the time lost in loading has been partly cut out by the system of trailers used. The use of trailers has focussed attention on the four-speed gearbox which has gained during the year. War orders have given impetus to the four-speed gearbox, these orders carrying a demand for a very low gear ratio, one of sixty to one, capable of overcoming every road condition possible.

ONE respect in which truck makers are not following the passenger car trend is in the matter of engine starters. The starter has made no progress in the truck field. There is little, if any, demand for the starter. The maker has aimed to keep the truck as simple as possible and in this respect has stood out firmly against adding starters or lighting generators.

## Gotham's Prosperous Show

ATTENDANCE figures indicate that the motor car show which closed on Saturday night was the most largely attended industrial show ever held in New York, the attendance not only far exceeding the attendance at any of the previous fifteen motor shows in New York but outstripping the attendance at any other industrial exhibit. With this demonstration of the increased interest of the public in the motor car, it is not surprising that motor car makers look with peculiar optimism at the 1916 business and declare that it will be limited only by the ability to secure material and the further ability to manufacture it into complete cars. So far as the East is concerned there has been an avalanche of business prosperity which began about November 1 and still is continuing. The Christmas shopping in Greater New York was the greatest in the history of the city, practically every department store exceeding the business of previous years. New Year's eve celebrations exceeded those of former years. In fact, it is impossible to discover any evidences of retrenchment; rather it is optimism and business prosperity on every hand.

RETAIL sales at the show greatly exceeded those of any previous year. Some concerns did more real business in the week than they did in the entire month of January last year. There was more buying in the high-priced car field than at any previous New York show, this being particularly true at the Salon where high-class body work was a feature and was appreciated by the visitors.

# Famous Drive of Wealthy Horsemen to Be Opened to Motors

## Harlem Speedway, Costing More Than $5,000,000, No Longer Attracts Millionaires with Fast Trotters and Pacers

NEW YORK, Jan. 11—Another province over which the horse once reigned is threatened with attack and capture by the motor car.

Following the reconstruction of the Sheepshead Bay track, where once satin-bloused jockeys plied whip and spur to thoroughbreds in the home stretch drive, into a speedway for motor car competition, comes the announcement that the Harlem speedway, constructed at a cost of more than $5,000,000 and famous as the scene of the brushes of amateur light harness horsemen, is to give way to the gasoline-driven limousine, touring car and roadster.

**Taxpayers Getting Small Return**

According to reports made to Borough President Marks by Chief Engineer Stern of the bureau of highways on present conditions over the speedway, traffic has fallen off to such an extent that it is estimated by Chief Engineer Stern that the average yearly maintenance for the last 15 years of approximately $20,000 is too high for what the taxpayers are receiving in return.

Park Commissioner Cabot Ward intends to have a bill introduced in the legislature to enable him to change the character of the speedway and throw it open to all kinds of vehicles the same as a public street. The Park Commissioner and Borough President Marks have agreed to lay the matter before the board of estimate with the recommendations for legislative action. The plan calls for paving one side of the 90-foot drive and open it for motor traffic. The cost of paving it is estimated would amount to $107,000.

At the present time the speedway, under an act of the legislature, is used exclusively by light horse-drawn vehicles and equestrians. Motor cars are not allowed on the drive which extends from 155th street to Dyckman street. The study of traffic, which covered a period of 7 days, from 8 o'clock in the morning until 6 o'clock at night, during the early part of last month showed that during this time only 641 vehicles and 25 equestrians used the driveway.

During the early days of speedway brushing prominent horsemen were to be seen handling the reins over trotters and pacers famous in the annals of harness horse racing. The introduction of specially prepared events, arranged in classes according to the records and speeds of the horses, drove many of the amateur drivers off the speedway, and thereafter the public interest waned. The sidewalk specially built on the riverside for the use of the public served as a grandstand, but of late years the small fields did not help to popularize the sport.

**Used By Prominent Men**

Many men prominent in New York affairs were to be seen driving on the speedway. The late William H. Clark, who was corporation counsel, built a stable at the south end of the speedway and exercised his famous horse there daily. C. K. G. Billings is one of the few to continue to use the drive.

# See America First — See America Now

**EDITOR'S NOTE—This is the sixty-first of a series of illustrations and thumb-nail sketches of the scenic and historic wonders of America to be published in Motor Age for the purpose of pointing out to motorists the picturesque points of interest in their own country.**

*NO. 61—VIRGINIA'S NATURAL BRIDGE*

*ON the western slope of the Blue Ridge mountains and near the center of the state of Virginia, Nature, greatest of builders, has carved a natural bridge that ranks among the great wonders of the world, a quasi-mysterious structure, 215 feet in height and 100 feet wide with a span of 90 feet, that is interesting both from the scenic and historic viewpoint. George Washington, when a surveyor for Lord Fairfax, carved his name on the rock where it now may be seen. During the Revolution, the French soldiers organized two expeditions to visit it and from their measurements and diagrams, a picture of the bridge, which was copied in Europe and America for nearly half a century, was made in Paris. In the early part of the last century, the bridge attracted scores of notables, among which were Chief Justice Marshall, James Monroe, Henry Clay, Andrew Jackson, Martin Van Buren and Sam Houston, whose signatures can be found in the guest registers. The original bridge tract was granted by King George III to Thomas Jefferson in 1774. After he was elected president, Jefferson visited the place, surveyed it and made a map of the natural curiosity. The next year, he returned and brought with him two slaves, Patrick Henry and wife. For them he built a log cabin with two rooms and directed that one should be reserved for the entertainment of strangers.*

# Corona Bids for Grand Prize Race

## Circle City Promoters Vote $10,000 Purse for March 17 Event

CORONA, Cal., Jan. 8—Interest in motor car racing has been revived here with the result that the famous Corona course, on which Eddie Pullen established a new world's road racing record of 78 miles per hour in 1914, will be the scene of gasoline-scented competition again in the spring.

This was the decision reached at an enthusiastic meeting of motorists and sportsmen held here tonight when it was announced that application would be made to the contest board of the American Automobile Association for the March 17 date and that the event would be run under the semi-speedway classification as a result of the recent ruling of Chairman Kennerdall that contests held on permanently improved roads would not be granted road race sanction.

It also was announced at tonight's meeting that the Corona promoters have been negotiating with the Automobile Club of America for the past 2 months in hopes of getting the international grand prize race for 1916 and it is very probable that this classic, which was held at Santa Monica in 1914 and at the Panama-Pacific exposition last year, will be run on the Grand boulevard that circles Corona.

**May Be Corona Grand Prize**

If the famous gold cup of the A. C. A. is not awarded Corona, the March 17 race will be a 300-mile contest for cars with a maximum piston displacement of 450 cubic inches and will be known as the Corona grand prize.

At tonight's meeting, the promoters voted to hang up $12,000 in prize money for the St. Patrick's day event and an effort will be made to raise another $1,000, which will go to the winner provided he betters Pullen's world's record. This purse will be almost double the amount offered for the grand prize at San Francisco last year when the winning drivers split $6,000.

The enthusiasm displayed at the meeting tonight and the activity of the promoters of the Ascot Park speedway at Los Angeles promises a season of winter racing in Southern California that will provide good sport during the next 4 months. According to the Los Angeles' impresarios, there will be a 100-mile race at the speedway on February 2 for $5,000 in prize money and a second contest for a similar purse early in April.

### WILL SELECT SPEEDWAY CHAMPIONS

New York, Jan. 10—The contest board of the American Automobile Association has tentatively decided to select the master driver and master car in the 1916 speedway and road racing circuit, thus following the example set by Motor Age during the past several seasons of selecting the champion driver and car for road racing and also for speedway racing. Plans are yet chaotic, but the suggestion has been made to award the driver so distinguished with a gold medal, carrying his profile on the front and a suitable inscription on the rear and further to give him $500 in gold. The complete details of the award will be worked out by the contest board.

During the past year, Motor Age awarded the speedway supremacy to Gilbert Anderson with the Stutz car and road racing supremacy to Earl Cooper, also driving a Stutz. The minor speedway circuit championship was awarded to Edward Rickenbacker in a Maxwell. In making these awards the two invitation 100-mile speedway races won by Resta were not considered because of their invitation nature. It was necessary to establish a major speedway circuit, made up of Indianapolis, Chicago, New York and Minneapolis; and a minor circuit of smaller tracks where shorter races for smaller purses were run.

### CHANGE DATE OF CHICAGO DERBY

Chicago, Jan. 12—The date of the Chicago speedway 300-mile race, originally set for June 17, has been changed to June 10 in order that the second annual motor derby will fall during the week of the Republican national convention.

The first race on the local speedway will be held May 20 when the amateur drivers' contest will be run. The rules for the contest have been confirmed by Chairman Kennerdall of the A. A. A. contest board and entry blanks will be sent out this week.

The promoters aim to make the amateur race an interclub affair and have the cars and drivers fly the colors of the Chicago Automobile Club, the Chicago Athletic Association, the Illinois Athletic Club, the Chicago Motor Club, the South Shore Country Club and any other organizations of the city that are interested in motoring.

### CINCINNATI SPEEDWAY PLANS

Cincinnati, O., Jan. 11—Cincinnati is to have a 2-mile speedway within 6 months, according to plans of the Cincinnati Speedway Co., organized here with a capital of $500,000 of which $400,000 has already been subscribed. At a meeting of the board of directors last week, authority was given to purchase a tract of land 1 mile long and 1½ miles wide near Sharon, O., and lying close to the Big Four, Pennsylvania and Cincinnati, Hamilton and Dayton railroad lines. There are four improved pikes surrounding the course on which it is planned to erect the new track.

The plan of construction of the Cincinnati track is to use 2 by 4-inch planks laid lengthwise. There is to be a clubhouse on the field and it is planned to hold military tournaments and general athletic contests on the course as well as motor car races.

The officers of the speedway are E. W. Edwards, president; Harry Lehman, vice-president; T. J. Davis, treasurer. The directors, in addition to the officers, are: M. J. Freiberg, R. K. LeBlond, J. P. Orr, I. J. Cooper, A. E. Burkhardt, W. T. Foley, T. J. Corcoran.

### $10,000 FOR TACOMA RACE

Tacoma, Wash., Jan. 10—Directors of the Tacoma speedway have drafted plans for their principal racing event of 1916, which will be held on August 5 and which will consist of but one race, instead of three as formerly, over a distance of approximately 300 miles and for prize money totaling $10,000, with additional purses for the leaders at the completion of 100 and 200 miles. The 1916 contest will be a combination of the Montamarathon and Potlatch trophy races of 1914 and 1915 but has not been named yet. As soon as the weather permits, the construction of guard rails on the outside of the banked turns, the absence of which are blamed for the death of Billy Carlson last summer, will be started and when the track is put in condition, it is expected that it will be much faster than in 1914 when the best average made was 85 miles per hour, Pullen's record for 200 miles in the Potlatch trophy event.

### SPEEDWAY BIDS FOR ELGIN RACES

Elgin, Ill., Jan. 10—Elgin may lose the national road races. Negotiations are pending between the Chicago Speedway Association, and the Elgin Road Race Association over a proposition to hold the 1916 races on the Chicago speedway. F. W. Jencks, general manager of the Elgin events, has arranged for a conference with D. F. Reid, president of the speedway association, to go over the details of the proposition and will present them to the Elgin directors for their consideration.

The Elgin races have a unique record. They are the only events in the annals of motordom which have continued for 6 years without interruption. Last year they were the only bona fide road races run. To move them to Chicago would destroy their especial claim to distinction and Elgin directors fear that it would be practically impossible to bring them back after they have once been run over another course.

### PLAN FOR DETROIT-CHICAGO ROAD

Battle Creek, Mich., Jan. 10—Plans for a permanent paved highway between Detroit and Chicago were considered at a banquet tendered by the Battle Creek

Sanitarium to the Michigan Detroit-Chicago Highway Association, last week. Three hundred delegates, representing the counties immediately affected, attended the meeting at which an organization was perfected. Officers were chosen as follows: President, A. B. Williams, Battle Creek; secretary, O. T. Towne, Kalamazoo; treasurer, Norman Flowers, Jackson.

The association proposed to secure the constructoin of a "highway of the most durable character and of such a type as will prove as nearly permanent as possible."

Many delegates assumed this to mean a concrete roadway, although no definite action with reference to the exact type of highway was taken by the association. The roadway extends from Detroit to Chicago, touching Ypsilanti, Ann Arbor, Jackson, Battle Creek, Kalamazoo, Dowagiac, Niles, and Michigan City. The distance is approximately 300 miles and a part of the highway is already of permanent construction. The cost of construction, if concrete is finally accepted as the best material for the roadway, will be approximately $14,000 a mile. It is proposed to issue bonds in the counties affected for the construction of the road.

### TENNESSEE VOTES ROAD BONDS

Nashville, Tenn., Jan. 10—Road building, aggregating $1,000,000 in cost, was arranged for by various Tennessee counties in 1 day last week. The big road day was January 3 on which practically all of the county courts held their first meetings of the year. A number of counties either authorized elections for road bonds or fixed dates for discussing it, while several arranged for the construction of links of national highways.

President M. M. Allison, of the Dixie Highway Association, appeared before the Hamilton county court, at Chattanooga, and at his suggestion the court voted to build a 5-mile road connecting the Signal mountain road and the Marion county Dixie link, construction of which had been authorized codnitional upon the Hamilton county action. This insures the construction of the eastern Tennessee part of the route.

At Lawrenceburg, a committee reported to the Lawrence county court that the Jackson Highway should be built through the county, with arms extending from it. This was approved and a bond issue of $350,000 probably will be voted to carry it out.

Greene county, in the northeastern part of the state, voted an additional $100,000 in road bonds. Marshall county took its first step toward freeing the toll roads, one of the largest turnpikes being bought. McMinn county postponed the question of voting on $200,000 road bonds for several months, but a favorable sentiment was shown. At Clarkesville, initial steps were taken toward the construction of two bridges across the Cumberland river.

# Cross-Licensing Plan Now Effective

## Seventy-nine Companies in Co-operative Agreement to Exchange Patent Rights

NEW YORK, Jan. 7—Announcement was made yesterday that the cross-licensing agreement in connection with patent rights, which had been under way among the manufacturers of the National Automobile Chamber of Commerce, has become effective through the joining in the agreement of seventy-nine companies whose verified patents exceed 350, and when are all recorded, are expected to run to 500 or more, covering all the various forms of detail construction found in motor cars.

Under this plan, makers license one another under the patents which they control, all with a view to avoiding litigation on the minor forms of improvements in motor car construction which have developed with the business, but which are in no way fundamental.

This extraordinary plan to exchange licenses among motor car builders, has caused astonishment among leaders of other industries who look upon it as one of the greatest pieces of co-operation that has been recorded in business. The result is expected to tend towards further improvements and increased values in cars, to the ultimate benefit of the retail buyer.

It has long been felt that the legitimate profit in the motor car business came from scientific manufacturing and selling of cars and not from the exploitation of minor patents which generally do not represent more than the incidental development of motor cars for which engineers are generally responsible, whether they take out patents of minor importance or not.

**Freedom of Originality**

Manufacturing companies are left free to display their originality along the line of design patents, while of course basis patents or those of a fundamental nature do not come within the operation of the agreement.

The strongest argument in favor of the cross-licensing agreement has been the fact that no matter how many patents any single company owned, it was certain that license rights under the aggregation of patents of all the other companies would be of more value than any one member's individual patents.

The successful outcome of this interchange of patent rights is expected to cement to an even more marked degree, the co-operative spirit that has been a dominant factor in the great success of the motor industry, the leaders in which have been Charles Clifton, president of the N. A. C. C. and the members of the patents committee: C. C. Hanch, chairman; W. H. VanDervoort, W. T. White, Wilfred C. Leland and Howard E. Coffin.

Members of the National Automobile Chamber of Commerce who have executed and who or whose successors now are parties to the cross-licensing agreement, include the following motor car and commercial vehicle manufacturers:

Allen Motor Co., American Electric Car Co., American LaFrance Fire Engine Co., Anderson Electric Car Co., Apperson Bros. Auto. Co., Argo Motor Co., Auburn Automobile Co., Autocar Co., Avery Co., Borland-Grannis Co., Briggs-Detroiter Co., Briscoe Motor Co., Buick Motor Co., Cadillac Motor Co., Cartercar Co., Chalmers Motor Co., Chandler Motor Car Co., Cole Motor Car Co., Consolidated Car Co., Jas. Cunningham, Son & Co., Dodge Bros., Dort Motor Car Co., Elkhart Carriage & Motor Co., Federal Motor Truck Co., General Motors Truck Co., General Vehicle Co., Gramm Motor Truck Co., Great Western Auto. Co., Haynes Automobile Co., Hewitt Motor Co., Hudson Motor Car Co., Hupp Motor Car Co., Inter-State Motor Co., Jackson Automobile Co., Thomas B. Jeffery Co., Kelly-Springfield Motor Truck Co., King Motor Car Co., Kissel Motor Car Co., Kline Motor Car Corp., Lexington-Howard Co., Locomobile Co., of America, Lyons-Atlas Co., McFarlan Motor Co., Mack Bros. Motor Car Co., Maxwell Motor Co., Mercer Automobile Co., Milburn Wagon Co., Mitchell-Lewis Motor Co., Moline Automobile Co., Moon Motor Car Co., Mutual Motors Co., National Motor Vehicle Co., Nordyke & Marmon Co., Oakland Motor Car Co., Olds Motor Works, Paige-Detroit Motor Car Co., W. A. Paterson Co., Pathfinder Co., Pierce-Arrow Motor Car Co., Premier Motor Mfg. Co., Pullman Motor Car Co., Rauch & Lang Carriage Co., Regal Motor Car Co., Reo Motor Car Co., Saxon Motor Co., Scripps-Booth Co., Selden Motor Vehicle Co., F. B. Stearns Co., Sternberg M. T. Co., Stevens-Duryea Co., Studebaker Corp., Stutz Motor Car Co., Touraine Co., Velie Motor Vehicle Co., Walter Motor Truck Co., Waverly Co., Westcott Motor Car Co., White Co., and Winton Motor Car Co.

### BARTHEL JOINS KING FORCES

Detroit, Mich., Jan. 11—F. A. Vollbrecht, vice-president and general manager of the King Motor Car Co., Detroit, has resigned and left the motor car field to engage in manufacturing in Detroit. Theodore E. A. Barthel has succeeded him. Mr. Barthel has been connected with the industry since 1902 at which time he joined the Olds Motor Works.

Since then he has seen service with several of the large concerns in the capacity of financial adviser.

# Cleveland Show Opens

## Fifteenth Annual Exhibit Visited by Great Throng of Interested Persons

### Oriental Decorations with Pagoda Gateway Wisteria-Festooned

CLEVELAND, O., Jan. 8—Although the doors of the big Wigmore Coliseum were opened for visitors to the fifteenth annual Cleveland motor show at 1 o'clock this afternoon, the formal opening did not take place until 7:30 in the evening. Throughout the afternoon, however, there was a constant throng of people looking over the displays, although some of them were not yet in place. To the dealers, however, this eagerness to examine the models indicated the great interest that is taken in the new 1916 cars.

Decorations are oriental, the main entrance being through a pagoda gateway lined with wisteria and cherry blossoms. The columns were surmounted by huge mandarin lanterns and wound with the favorite shades of the east. Banners with Japanese lettering marked the location of each display.

**Forty-five Cars Exhibited**

Forty-five exhibits of motor cars and trucks are in place. From one to thirteen cars are shown in each exhibit. The Overland-Cleveland listed the largest number of cars of any exhibit, thirteen, and the Velie Motor Car Co. comes next with twelve. The White Co., showed eleven models. The usual exhibit consisted of from one to five or six cars. The number of chasses shown seems rather small, considering the fact that they are always given particular attention.

Two local companies, the Peerless Motor Car Co. and the White Co., made special displays of the trucks turned out at their plants. The Peerless showed models of its 2-, 4-, and 5-ton trucks, all 32.4 horsepower. The White Co. displayed a complete 45-horsepower truck and chasses of a 45-horsepower and three 30-horsepower trucks. Several other light trucks and delivery wagons were shown, including the Baker electric 1- and 2-ton trucks.

The price range of the cars shown at this exhibition is interesting. The highest-priced car listed is a White 45-horsepower limousine at $5,200. The same company showed a town car limousine, town car landaulet and a sedan at $4,000 each. A Winton model three-quarter limousine at $4,500 was listed with the other Winton cars. The Fred P. Brand Motor Co. exhibited a Pierce-Arrow seven-passenger touring car and a four-passenger coupe at $5,000 each. The other extreme was reached in the Ford runabout at $390 and touring car at $440. The Saxon runabout at $395 comes next. The majority of the cars shown are of the medium-price models, ranging from $650 up.

Cleveland people are rather at a loss to know the exact price of the new H. A. L. twelve-cylinder, seven-passenger touring car that will be manufactured by the H. A. Lozier Co., of this city. It is listed in the exhibit at $2,100.

Three manufacturers exhibited electric cars. One of them showed two models; another three, and the third showed four.

### PROTECTS NAME OF DODGE

Detroit, Mich., Jan. 10—The Wayne county circuit court has issued a restraining order in favor of Dodge Bros., against the Dodge Motor Car Co., whereby the latter cannot use the name Dodge in connection with the manufacturing of its cars.

Dodge Bros. filed suit against the Dodge Motor Car Co., in August, 1914, because this concern which had started in business in July of that year, was using the name Dodge on its cars. The company was promoted by Alvan M. Dodge, who was formerly with the Wahl Motor Car Co. Dodge Bros. claimed that the new company was trying to profit by the name Dodge which had been well known for a period of 12 years.

### LELAND TO WINTER IN SOUTH

Jacksonville, Fla., Jan. 10—Believing that the mild climate of the far south will prove beneficial to his health, which has been injured by the arduous duties that he has performed, Henry M. Leland, millionaire head of the Cadillac company, of Detroit, has gone to Florida for the winter. Arriving at Jacksonville a few days ago accompanied by his secretary, Richard Harft, and a male nurse, Mr. Leland went to the Windsor where he will spend a week or 10 days. He will then go to Bell-Air where he will spend the remainder of January and all of February.

### SIMPLEX MAKING AVIATION MOTORS

New Brunswick, N. J., Jan. 10—The plants of the Simplex Automobile Co., this city, are being materially enlarged for the manufacture of aeroplane motors on designs and under the patents of the French motor which representatives of the company have secured in France through the assistance of the French government. The motors, which are being made for the Wright Aeroplane Co., will be made under license, free of charge.

Contracts for the construction of additional buildings at the Simplex plant to cost $300,000 have already been let and more than $200,000 worth of new machinery has been ordered.

### SCRIPPS-BOOTH TO ENLARGE PLANT

Detroit, Mich., Jan. 10—The Scripps-Booth Co., which makes the Scripps-Booth cars, has increased its capital stock from $150,000 to $350,000, for the purpose of enlarging its plant and increasing its manufacturing facilities. The company has elected Clarence H. Booth, vice-president and managing director.

# New Cars at Milwaukee

## Cream City Motor Connoisseurs Spell Success to Exhibit By Boosting Attendance

### Up-to-the-Minute Displays Made By Car and Parts Makers

MILWAUKEE, Wis., Jan. 8—A motor exposition of real metropolitan caliber is the eighth annual show of the Milwaukee Automobile Dealers, Inc., which opened last night in the Milwaukee Auditorium and attracted the largest first-night crowd ever known here—4,790 connoisseurs. Although the Milwaukee show follows on the heels of the New York show and precedes the Chicago show by more than 2 weeks' time, manufacturers of cars, parts, accessories and supplies have dealt kindly with their agents here and enabled them to put on display all the up-to-the-minute cars and trimmings that the industry has produced to date.

Among the features of the passenger car department are the new Marmon, the new Case, the Hudson Super-Six, the Hayes twelve, the latest Cole eight, and the Kissel limousine half-finished to show the twenty-one operations required in painting the job.

**Fifty-six Exhibitors**

The following makes of cars are exhibited at the Milwaukee show: Apperson, Cadillac, Cole, Packard, National, Hollier, Jackson, King, Mitchell, Oakland, Oldsmobile, Regal, Stearns, Auburn, Buick, Chalmers, Chandler, Empire, Franklin, Glide, Grant, Imperial, Jeffery, Kissel, Locomobile, McFarlan, Marion, Marmon, Moon, Overland, Paige, Paterson, Crow-Elkhart, Pierce-Arrow, Reo, Saxon, Studebaker, Velie, Westcott, Winton, Dort, Chevrolet, Briscoe, Argo, Dodge, Ford, Inter-State, Hupmobile, Maxwell, Moline, Monroe, Pullman, Scripps-Booth, Sphinx, Stutz and White, a total of fifty-six.

As in past years, the entire basement of the auditorium is devoted to exhibits of motor trucks, commercial cars, bodies, and heavy parts and supplies.

In the main arena and auxiliary halls, a simple but effective decorative scheme of the Venetian garden style has been provided as a background.

The Milwaukee show, like its predecessors, is principally a retail selling proposition, although it ranks high as a booster for the sales by state or district agents to sub-dealers from all parts of the state. The M. A. D. really conducts three shows annually, the big exposition in the Auditorium in January; the "progressive show" of garage-circuit display in April, and the state fair show in September. The April affair is purely one of a retail nature, while the other two are both wholesale and retail sales-promoters.

It is estimated that more than 1,500 garage-keepers, repairshop owners and

agents from every section of Wisconsin attend the January show. With this in view, various organizations select the January show week for the important conventions of the year, notably that of the Wisconsin Retail Automobile Dealers' Association. The M. A. D. annually entertains the visiting tradesmen at a banquet, which this year will be held Wednesday evening, January 12, after show-closing time. More than 700 acceptances have been booked.

The Milwaukee show is the principal one between Chicago and Minneapolis and caters to a total population estimated at 4,000,000 people. It is so well thought of that most factories send one or more representatives to Milwaukee each year to help exhibitors in various ways. Where cut-out chassis are not available, they are provided by the Wisconsin dealers themselves, as in the case of the Oakland.

The largest single display at this year's show is that of the Milwaukee branch of the Packard Motor Car Co., which occupies four large main arena spaces and exhibits seven Packard twin-six models. Mitchell, Kissell, Jeffery and Buick also occupy unusually large space, with distinctive features in each display.

The show, as usual, runs over Sunday, closing Thursday night, January 13. A Grant six will be given away at the close of the show.

### RAISES MORELAND TRUCK PRICES

Los Angeles, Cal., Jan. 10—A new schedule of prices has been announced for 1916 by the Moreland Distillate Motor Truck Co., of this city. The reason given is that materials have increased in cost to such an extent that the increase in price on the Moreland models was absolutely necessary. While some of the materials used in the manufacture of trucks has increased 300 per cent, the increase in price of the Los Angeles-made trucks is but 5 per cent. This raise has been made on all models and will take effect immediately.

### CHEVROLET PLANT AT ATLANTA

Atlanta, Ga., Jan. 10—That the Chevrolet Motor Car Co. will construct at Atlanta at an early date a concrete assembling plant with a capacity of 15,000 cars a year is information which has been received with a great deal of interest here. The manager of the Atlanta branch, A. H. Simms, declined to discuss the matter other than to state that Atlanta has been selected as the place for a plant and that officials of the concern are considering a number of sites which have been tendered to them.

### CADILLAC SELLS 20,405 EIGHTS

Detroit, Mich., Jan. 10—Cadillac cars, having a value of between $41,000,000 and $42,000,000, were sold by the Cadillac Motor Car Co. in 1915. Exactly 20,405 eights were shipped between January 1 and December 31, 1915. At the present time, there are about 7,500 men working at the different plants of the company.

# Sand Roads for Safety

## Motor Car Accidents in San Francisco Greatly Reduced Lately

### Three Main Thoroughfares Made Safe on Slippery Days

SAN FRANCISCO, Cal., Jan. 10—Motor car accidents have been greatly reduced in San Francisco during the past 6 months by the introduction of sanded streets. The three great arteries of the city, Market street, Geary street and Van Ness avenue, have been made safe for motor car traffic on the wettest days by a film of sand spread by the city's street cleaning department.

On foggy, wet mornings, when a drive down town is dangerous, the motorists are given sand and the system is really a success. The sand film gives traction and practically eliminates all danger of skidding. Traffic is now secure and the cars, including the "jitneys," are controlled at crossings.

San Francisco is sanding about 100 blocks on wet mornings at present. The work is done by a spreader which is operated by one man. To cover this area, requires about 6 cubic yards of sand. The sand used costs about $1.75 per cubic yard, dried and loaded on the spreader. Three spreader teams and three men are used to do the work. It is estimated that it costs the city $20 per day to do the sanding.

**Cost Is Small**

The cost is a small matter to the satisfaction that the non-skid streets bring to drivers of motor cars and pedestrians alike.

D. J. McCoy, superintendent of streets, San Francisco, Cal., has devised a sand spreader to be rigged on a motor truck chassis. This spreader is much more efficient than the horse-drawn device and has the advantage of being detachable, the truck being used for varied purposes when not in use spreading sand.

The spreading device is a simple flat disk connected by chain to a shaft-driven by the drive-shaft of the truck. The platform, holding the disk with its sand hopper, is clamped to the rear of the truck. Blades catch the sand as it flows from the hopper and throw it in a fine spray over the street. With the truck running in second gear, it is possible to throw sand from the street car tracks to the curb on Market street, a distance of 30 feet.

Using a 5-ton truck, this spreader will spray 4 cubic yards of sand at a cost of $12, which will cover approximately 150,000 square yards of asphaltum, nearly as much as San Francisco sands. This makes the cost per yard about 8 mills. A lighter truck with smaller running expense, would undoubtedly reduce the cost.

The sand used is a coarse grade of ocean sand. It is very clean and sharp and is dried before use but not screened. Coarse sand is considered the most suitable for the work as it is not easily blown about and gives better traction.

The merchants objected to the use of sand at first but after 6 months of fewer accidents, have agreed that sand is a good thing even if it is blown about by the wind.

The only serious objection raised against the safety-first precaution is a fear that the sand will be worked into the asphalt, causing the same to disintegrate. The method has not been tried out long enough to get a line on its effect as yet.

### SHORTAGE OF FREIGHT CARS

New York, Jan. 8—That the freight car situation again has become acute is brought to light by the report of the traffic committee of the National Automobile Chamber of Commerce submitted at the annual meeting. The shipment of motor cars for the month of December amounted to 15,582 carloads. This is an increase of 144 per cent over the same month of last year, when 6,378 were shipped. The number of freight cars for motor cars now in service is 59,274, and these will shortly be increased by 10,000, as the New York Central will soon put on 9,000 and the Pennsylvania road 1,000 more.

The traffic department of the N. A. C. C. intends to have a representative visit all local centers to confer with the traffic organizations for the purpose of securing coöperation. The traffic department of the N. A. C. C. is in correspondence with every railroad for the purpose of securing more cars and impressing on the freight departments the necessity for quick return of the unloaded cars to the proper terminals.

Besides the routine business taken up at the annual meeting, the N. A. C. C. approved the recommendation of the Society of Automobile Engineers on standardization of methods of numbering motors, the uniform license plate and the proposed anti-glare headlight ordinance.

### AUSTIN-CADILLAC DECREE SIGNED

Detroit, Mich., Jan. 8—Judge C. W. Sessions, of the United States district court, in Grand Rapids, Mich., today signed the final decree in the Austin-Cadillac two-speed axle case. It was on January 8, 1915, that the judge rendered a decision in favor of Walter S. Austin, of the Austin Automobile Co., Grand Rapids, granting the latter's demand for an injunction and damages against the Cadillac Motor Car Co., ordering an accounting so that the amount of damages could be fixed. The parties since then have agreed upon a form of decree, which now has been confirmed by the judge and signed by him, thus bringing the case to an end. Suit was started by Mr. Austin in July, 1914. He claimed that the Cadillac company had and was infringing upon his two-speed axle patent.

# Show Records Broken

## Exhibition of Cars at New York Attracts 250,000 Motor Connoisseurs

### Makers Report Many Sales Closed and Dealers Named

NEW YORK, Jan. 10—The sixteenth annual New York motor show closed Saturday night after a week of record-breaking attendance and sales, approximately 250,000 persons, or 33⅓ per cent more than last year, inspecting the 326 cars and chassis as well as the 290 accessory exhibits on display in the Grand Central Palace. This is the largest attendance recorded for any motor show, horse show or other great exhibition ever held in this city. In fact, during the entire week, hotels were over-crowded and theaters overwhelmed with demand for tickets. Never have the huge hostleries of the metropolis experienced such a rush of business with the exception of the week of the Hudson-Fulton celebration.

**Exhibitors Well Pleased**

The exhibitors themselves were delighted with the sales made, new agents obtained, and general business done and, practically to a man, declared the week to have been one of unprecedented success as compared with the shows of previous years.

The atmosphere of the show this year was more businesslike than has ever been the case. More people seemed to come to the show with the intention of buying a car than ever before and the questions of visitors at the various booths were in every case evidence of the greatly increased familiarity of the general public with the essentials of construction and the performance to be expected from the cars of today. These questions reveal marked attention to details which in former years were passed over without comment.

The dealers state that the great improvement in business confidence over the corresponding period a year ago is reflected in the attitude of the show visitors, who seemed to have more ready money and to be more inclined to spend it than at that time. More retail sales are reported than ever before, practically every exhibitor having sold several cars while some of the more popular low-priced makes reported many sales each day.

From the dealers' standpoint the show has netted more live prospects for immediate and spring delivery of cars than any previous exhibition; in fact, some exhibitors sold more cars last week than in an entire month of the past year. In addition many new contracts were signed and much new territory covered for 1916. Practically all the dealers predict a big shortage of cars for next summer's selling season. The attendance of dealers at the show was much better than expected, men coming from as far south as Florida and as far west as Omaha, St. Louis and Kansas City with a few from the Pacific coast. As to the individual exhibitors' opinions of the show, these may be realized from the statement that the sales made vary from 40 to 600 per cent in excess of those made at any previous show.

In the accessory field it is the same story over again. Though here the sale made during the week were in most cases comparatively small, the general interest shown, the new contracts secured and territory distributed served to make the net business gain far above that attained at last year's display.

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**FOREIGN SALON AT CHICAGO**

Chicago, Jan. 10—Chicago will have two shows during the week of January 22 to 29, the same as New York had two shows last week. In addition to the show of the National Automobile Chamber of Commerce at the Coliseum and First Regiment armory, there will be a salon held in the Auditorium hotel, at which the following makes of cars will be exhibited: White, Simplex-Crane, Rolls-Royce, Lancia, Brewster and one or two others.

These are practically the same makes that have exhibited during the past week at Hotel Astor, New York, under the name of The Automobile Salon, which has succeeded the Importers' Salon, held in the same place in New York for many years. The show this year had many more American cars than foreign makes, in fact, only five different makes of foreign cars were exhibited last week, whereas there were American cars of the following make on exhibit: White, Packard, Locomobile, Cadillac, F. R. P., Simplex-Crane, Singer, Daniels, Owen Magnetic and Brewster.

White exhibited at the Salon after withdrawing from the N. A. C. C. show because of differing with the association on the matter of drawing space. Many of the other exhibits of American cars, such as Locomobile, Cadillac, Owen Magnetic and Packard, were made by the body builders and not by the companies themselves.

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**M. AND A. M. OFFICERS RE-ELECTED**

New York, Jan. 7—At the annual meeting of the Motor and Accessory Manufacturers, held yesterday, the present officers were re-elected for another year. They are as follows: President, F. H. Lovell, Jr., Lovell-McConnell Mfg. Co., Newark, N. J.; first vice-president, C. W. Stiger, Stromberg Motor Devices Co., Chicago; second vice-president, C. E. Thompson, Steel Products Co., Cleveland, O.; third vice-president, T. J. Wetzel, Dyneto Electric Co., New York; treasurer, L. M. Wainwright, Diamond Chain and Mfg. Co., Indianapolis, Ind.; secretary, Alfred P. Sloan, Hyatt Roller Bearing Co., Newark, N. J., and directors for 3 years: F. H. Lovell, C. E. Thompson, A. P. Sloan, and C. E. Whitney. William M. Sweet continues as manager.

# Discuss Preparedness

## Army and Navy Officials Speak at Annual Banquet of the S. A. E.

### Officers Will Visit Motor Car Plants to Study Construction

NEW YORK, Jan. 7—One of the most successful banquets ever held by the Society of Automobile Engineers was given last night at the Hotel Plaza. The speakers included Josephus Daniels, secretary of navy, Major General Wood, U. S. A. commander of the Department of the East, and Alfred Reeves, general manager of the National Automobile Chamber of Commerce. The dinner was presided over by William H. Vandervoort, president of the S. A. E.

Preparedness was the keynote of the addresses given at the close of the banquet. President Van Dervoort first addressed the members extending a welcome and reviewing the accomplishment of the Society. He pointed out the peculiar fitness of the S. A. E. to be an efficient aid to the government in time of war and peace and he assured the government that the society is ready to take officers of the army and navy into the plants of the manufacturers for the purpose of instructing them in the intricacies and economics of motor car manufacture.

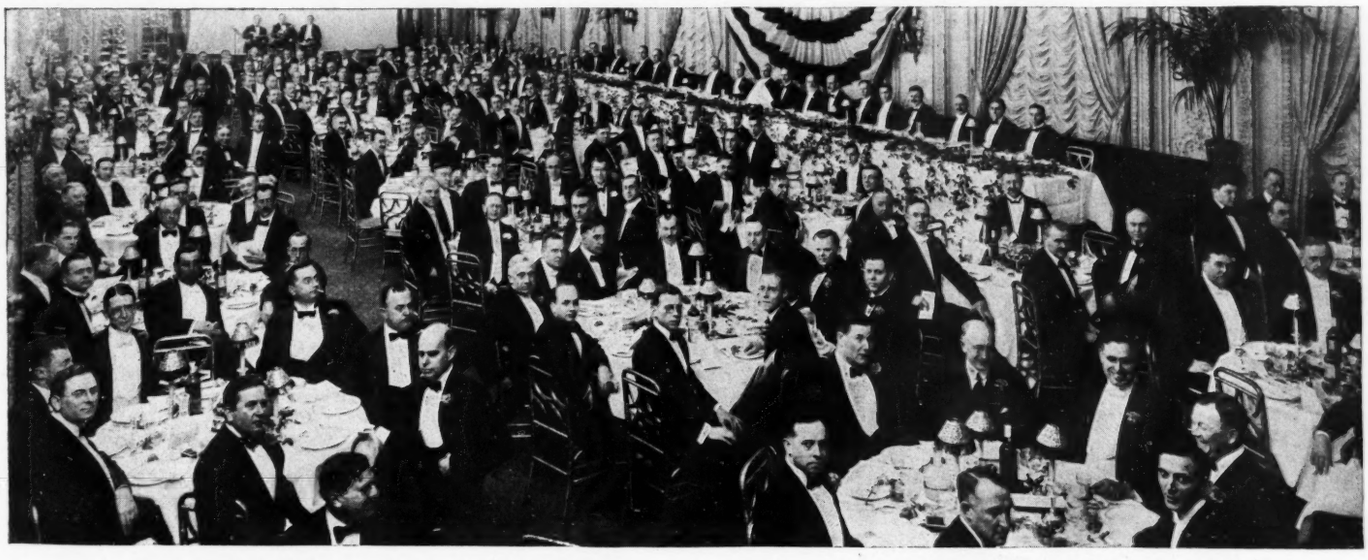
**General Wood Speaks**

General Wood delivered a brief speech in which he brought out the necessity of the organization of industries to support the fighting arm of the service. An important point brought out in his address was the need of standardization of the motor truck. He stated that the army did not desire a miscellaneous mass of different sizes and varieties of vehicles to aid in solving transportation problems, but a standard form of vehicle upon which replacements could be easily made. He also said that he hoped an army consulting board, similar to that recently created for the navy, soon would be formed.

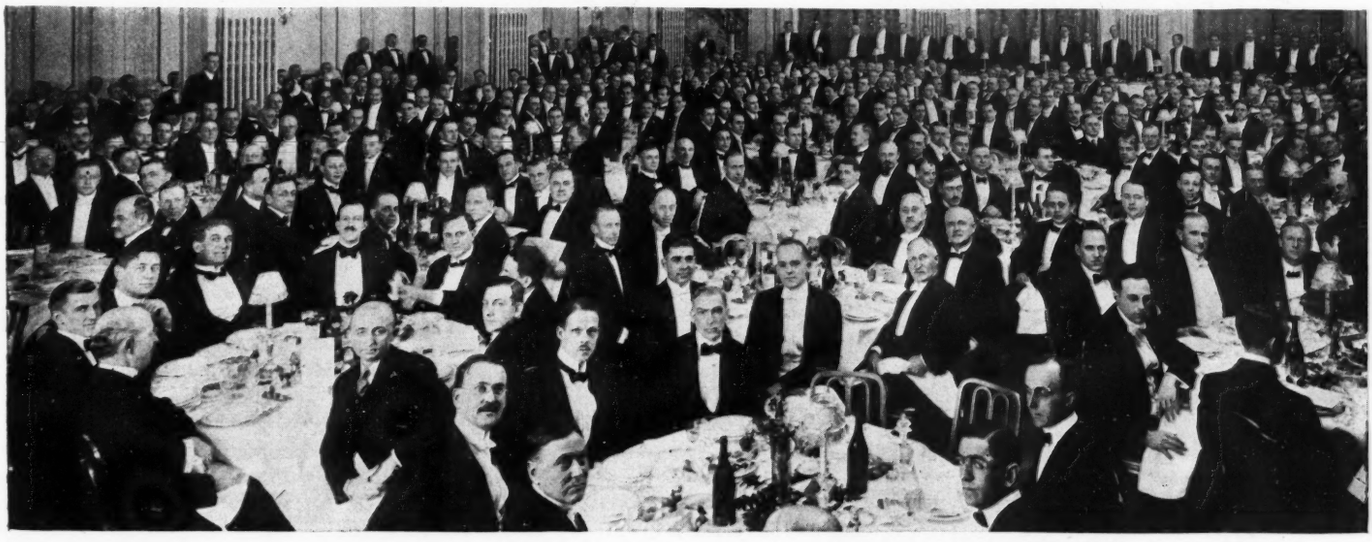
Secretary Daniels stated that the navy department would take advantage of the opportunity of sending officers to the motor car plants for the purpose of securing technical information and that beginning with the coming spring, squads of officers will be detailed for such work. The need for a good aeroplane motor was mentioned by Secretary Daniels who pointed out that the motor car engineers would be the logical persons to develop engines of such a design.

Alfred Reeves, general manager of the N. A. C. C., told what the motorist should do in time of war. He pointed out to General Wood that the 240,000 cars in the state of New York alone, could move a million men over the roads at an average speed of 30 miles per hour.

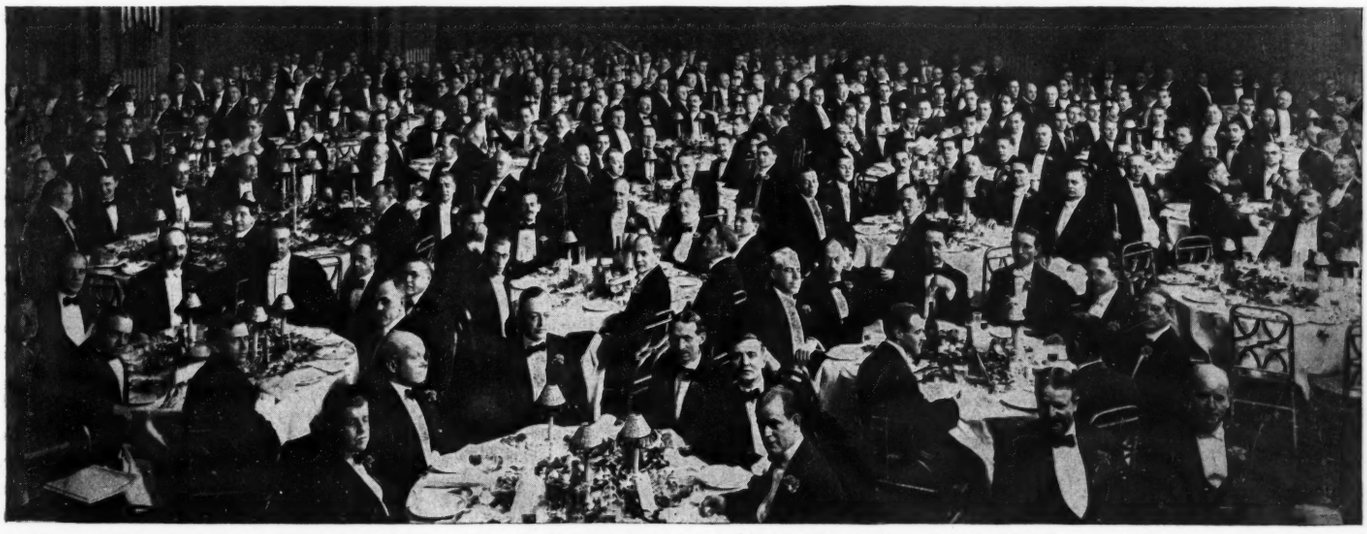
# During New York Show Week, the Famished Ghost of Lucullus Writhed with Envy



*Thomas P. Gore, United States senator from Oklahoma, was the principal speaker at the annual banquet of the National Automobile Chamber of Commerce, held at the Waldorf-Astoria on January 4*



*The mid-winter banquet of the Society of Automobile Engineers, held at the Hotel Plaza on January 6, was a most patriotic gathering as Secretary of the Navy Daniels and General Leonard Wood spoke on military preparedness*



*The third banquet of national importance held during the week of the New York show was the eighth annual dinner of the Motor and Accessory Manufacturers, served at the Waldorf-Astoria on January 5*

SOME OF THE MULTITUDINOUS USES IN WHICH THE MOTOR TRUCK HAS MADE A PLACE

*1—Tractor hauls trailer-load of milk from bottling works to substation in dairy service; 2—Combination of tractor and dump-body trailer in coal delivery; 3—Overhead chain hoist for hitching tractors and rear loading trucks and trailers with bulk material; 4—White trucks with trailers hauling stone. Note automatic loading arrangement; 5—White trucks specially equipped for railway work*

# Motor Trucks Are Greatly Improved for New Season

## European War Has Had Effect in Production of Better Commercial Vehicles for American Users

THE motor truck industry in America has had a year unprecedented in its history. From the standpoint of production and sales as well as from the standpoint of vehicles more adapted to the use of the truck owner, the past season has been one of greater activity than could have been expected. To a great extent this activity in the commercial vehicle industry has been due to the conditions brought about by the European war. War orders have been a source of profit mechanically as well as financially to builders of trucks and indirectly have been a source of profit to the American truck buyer.

**Battlefields Teach Lessons**

This rather anomalous situation is due to the fact that makers of business vehicles in America, whether they have actually had their product in service on the European battlefields or whether they have confined their selling activities to America, have taken advantage of the lessons learned on the battlefield and on the rutted roads behind the lines to make the vehicles better able to withstand the abuses and extraordinary conditions of which European service is the supreme test of their ability to withstand such use.

The necessity for a quantity production of trucks to meet the needs of the warring nations in Europe has developed better manufacturing processes in American factories which make for a better truck without increasing price and has developed conditions by which the vehicles may be produced at a lower cost to the consumer. To such an extent is this true that even in spite of the rather severe increase in the price of materials which has been a concomitant of the European conflict there has been a distinct drop in the price of trucks for 1916. The average price of commercial vehicles listed on the American market for the new year is nearly $100 less than that of a year ago dropping from $2,500 as the average list of the 1915 models to $2,413 as the price of the 1916 car. Some of the 1-ton vehicles now list under $1,000, but the greatest reduction has been in the light delivery class and trucks with a capacity of 1,500 pounds.

Had it not been for a rather definite improvement in the new models as compared with those of the past season, it is to be expected that there would have been an even greater reduction in first cost. As an instance of this improvement in design might be mentioned the general dropping of the chain drive in favor of shaft drive and also a similar increase in the proportion of worm-driven vehicles and also a considerable increase in the double-reduction types.

The showing that trucks have made in the European war has been such that it has increased the respect of the American business man for the commercial vehicle. It has given him newer insight into the reliability and adaptability of the motor driven business wagon. With the coming of the prosperous season which is looked for, it is to be expected there will be a very great increase in demand for commercial vehicles in all sections of this country.

**General Expansion in Industry**

So far as the number of truck manufacturers are concerned there has been a very general expansion. The total amounting to 248 manufacturers, forty-six of which are new, although eleven have dropped out. This makes a net increase of thirty-

five in the number of truck builders. A production of 75,000 motor trucks is expected for 1916. During 1916 50,000 were built for domestic use and about half as many were exported.

The change to the worm drive has included such trucks as the Federal, all of whose models now are of this type, the Garford with five new worm-driven models, Gramm-Bernstein with wormdrive throughout the line, the Mack, whose new 1-, 1½- and 2-ton models are worm driven. The Packard, Moreland, Stegeman, with semer thousand-pound trucks and the Koehler.

**Greater Simplicity Evidenced**

Improvements in the line of simplicity take the form of better lubrication method with fewer parts exposed to the elements than formerly, more accessible and larger brakes and the increasing use of the Hotchkiss drive in which radius rods and torque arms are dispensed with. Unit power plants with which the clutches and gearsets are made integral are found in considerably greater numbers.

The last feature is one which, with the increase in shaft drive shows in one way how the motor trucks follow in the lead of passenger car development. Likewise passenger car practice has been followed out in the elimination of unnecessary weight. This is particularly true in the use of flexible channel section frame members, an idea which really is an European importation.

The aim for simplicity is shown very clearly in the matter of ignition. The same trend which is noticeable in the passenger-car development is in evidence in the truck field. Single ignition has increased in popularity with the truck makers to such an extent that now three-quarters of the models offered have only one source of current as against a little over half of them last year. Truck manufacturers have seemed to find that one ignition system is just as logical and just as safe from the standpoint of reliability as is one carbureter or one oil pump.

General use of stock units from the parts makers has standardized the trucks to a greater extent than has been possible before, particularly is this the case with such units as rear axles, motors and gearsets.

From the standpoint of appearance there has been some improvement, although as a general proposition the esthetic value of the truck design is subordinated to its utility features. Nevertheless there was a certain value to a truck owner's business in vehicles having good lines and the new designs are a step in the right direction. This step chiefly has been in changing the shape of the hood and come either from a redesign of the hood itself or as a secondary improvement on account of the change in location of the motor. The Renault type of hood has given place to what has become known as the Mercedes type in the Bessemer, Mack and Stewart trucks. G. M. C. and Moreland have put the motor underneath the hood instead of under the floor in their newer models so that the conventional type of bonnet is adopted.

A number of the manufacturers have added new models and in all of them the effect of later design is apparent. The Mack worm-drive model is a new one, Velie has added a 1½ and a 3½-ton model, Packard has added a 1 and a 1½ type, I. H. C. has a new 1,500-pound vehicle which, like the other sizes of this make for 1916, are the conventional low-wheel types instead of the high-wheelers that have been manufactured previously. The United trucks have been increased by an addition of 1½- and 2-ton models and the Duplex, a four-wheel drive design, has a new 2-ton vehicle which is provided with eight speeds. This probably is the result of lessons learned in building for the European military service where an extraordinarily low gear sometimes is demanded.

**L-Head Motor Gains Favor**

So far as engine design itself is concerned, the great increase in favor of the L-head type of motor seems to be the feature, together with a rather distinct speeding up of the motors, corresponding in some respects to the higher speeds employed in passenger-car engines. The L-head motors have increased to over 78 per cent. The most prominent among the manufacturers dropping the T-head in favor of the L-head design is the Packard.

The two-cylinder types have lost two exponents during the past year—the Palmer-Moore and the Koehler. The Stegeman has added a six-cylinder model

MOTOR TRUCKS IMPORTANT FACTORS IN AMERICAN INDUSTRY

*1—Six-wheeled Little Giant in meat delivery; 2—Wilson truck with trailer carrying motor car bodies; 3—White in the lumber industry; 4—G. M. C. as a dog catcher; 5 and 6—Two phases of rock transport in good-roads work; 7—Mack dump truck with power winch*

# American Trucks and Trailers

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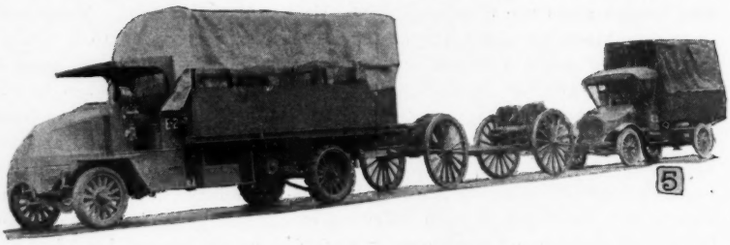

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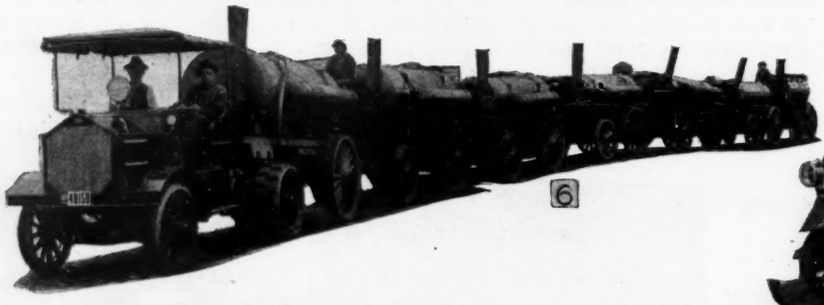

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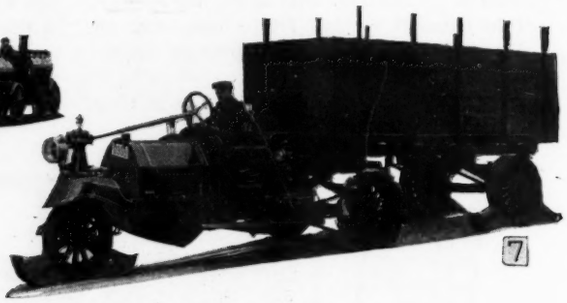

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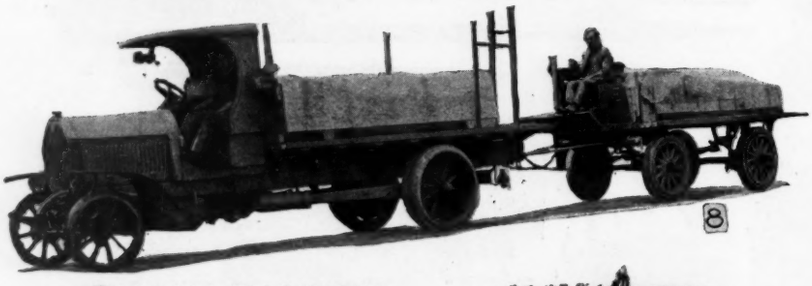

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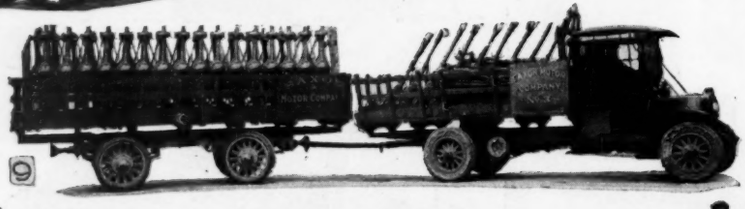

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1—*Duplex truck used in hauling live stock*

2—*Knox truck used to haul material in good roads work*

3—*Selden two-ton truck showing fifth wheel trailer attachment*

4—*Mack truck loaded with broken asphalt taken up in street repair in New York*

5—*Mack truck in army transport work*

6—*Knox truck hauling oil for road improvement*

7—*Knox tractor equipped with runners used in hauling ice*

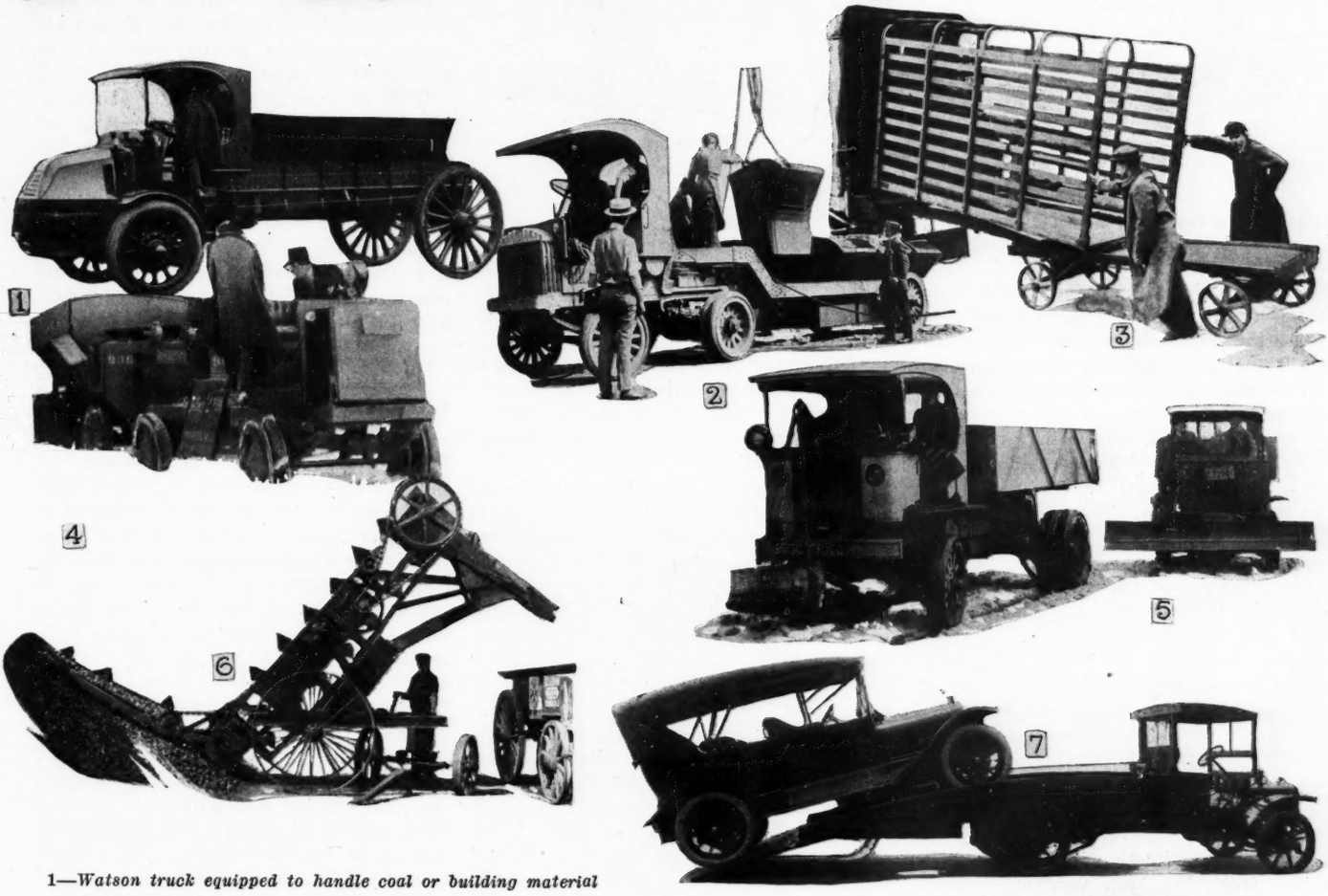
8—*Five-ton Troy trailer loaded with stone and being hauled by General Vehicle truck*

9—*One and a half-ton Federal truck in the service of the Saxon Motor Co., used in handling car parts*

10—*Knox tractor used in hauling cable for the Chicago Telephone Co.*

11—*Another view of the Knox tractor used by the Chicago Telephone Co. in construction work*

# Show Remarkable Versatility



1—*Watson truck equipped to handle coal or building material*

2—*G. V. truck loaded with crushed stone*

3—*Dummy body which is first loaded and then placed inside the truck body proper*

4—*Jeffery four-wheel drive 2-ton truck hauling sand and gravel*

5—*Garfield truck with scraper attachment*

6—*Device for loading truck with crushed stone*

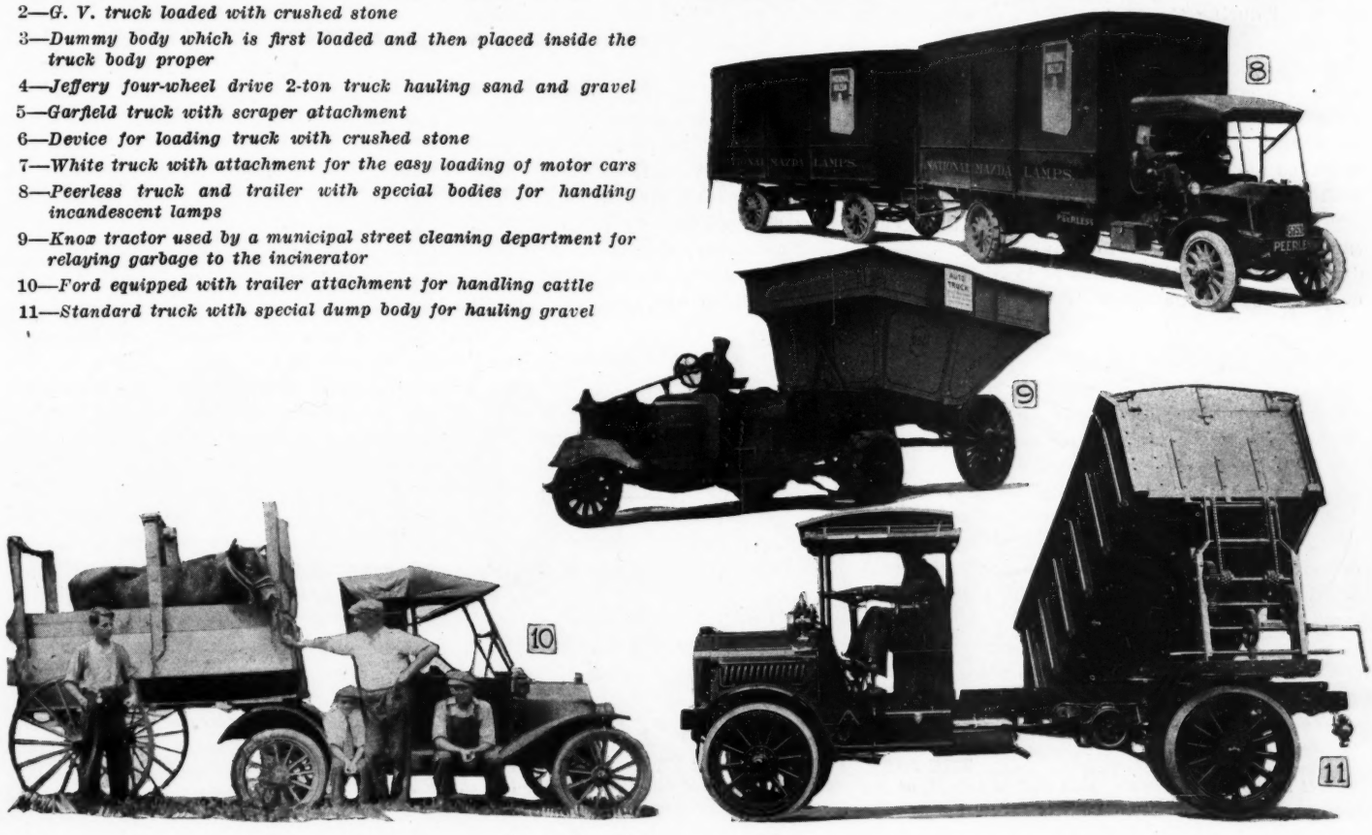
7—*White truck with attachment for the easy loading of motor cars*

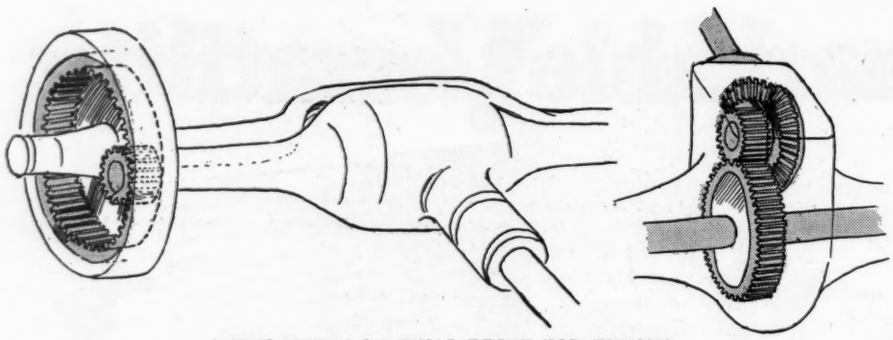
8—*Peerless truck and trailer with special bodies for handling incandescent lamps*

9—*Knox tractor used by a municipal street cleaning department for relaying garbage to the incinerator*

10—*Ford equipped with trailer attachment for handling cattle*

11—*Standard truck with special dump body for hauling gravel*





TWO TYPES OF FINAL DRIVE FOR TRUCKS

*At the left is shown the internal gear, which has a number of adherents. At the right is the double reduction throng, a combination of spur and bevel gears*

to its line, which gives it four in all, three other four-cylinder types being made.

The showing made by the cars which are driven on all four wheels in European service have given increased impetus to this design and there are now five manufacturers producing cars which give traction on all wheels. These are the Jeffery quad, the Four-Wheel Drive, the Duplex and the Couple-Gear. There is also a new truck, the Ware, which has this feature.

**A Comparison**

Electrification of the truck has not progressed to the extent which has the passenger-car field. Electric cranking and lighting has been little in demand except among the small delivery vehicles where frequent stops and starts are the rule. The question with the manufacturers and the users seems to be whether the additional first cost, complication and repairing expense will make up for the added convenience of this feature.

There is one direction in which the use of the truck has been very appreciably expanded during the past season and that is the use of trailers and tractors. By employing additional carrying vehicles without means of self-propulsion it is possible to have what amounts to a number of additional bodies and which can be unloaded and loaded at the same time and with still another in transit between the loading and unloading station. The arrangement is similar to having horse-drawn vehicles in the process of loading or delivery while the team is engaged in hauling another vehicle and thus accomplish the same results without duplicating the power units.

Another variation of this is by the use of dummy bodies which can be packed and unpacked and can be slipped within the main body or upon the bare chassis for transportation.

The development of tractors which have no carrying facilities of their own, but serve simply as the means for hauling the powerless vehicles about has gone forward along the same lines as in the past few seasons. The development has been chiefly along the lines of making them reliable and adaptable to a wider range of uses. One field in which these have gained a strong hold is in construction work in the cities where traffic conditions as well as financial consideration prevent complete trucks standing at long periods.

**Battery Rental Electric Truck Trend**

Prominent among the developments in the electric vehicle field during 1915 is the adoption of the battery rental plan. With the electric vehicle dependent entirely upon its battery for power, and with the battery usually dependent upon some central source for current supply, it is logical for the same company which furnishes the current to perform the complete service, supplying the electric truck user not only with current, but with a completely charged battery properly filled and, when necessary, cleaned of sediment.

Notable among the cities wherein this battery rental plan has been put to test during the last year are Hartford, Conn., Boston, Mass., and Chicago. In these three cities the central station even goes further, actually selling the vehicle. This plan is looked upon by manufacturers of electric commercial vehicles as one that doubtless will go a long way toward removing one of the greatest deterrents to the extent of using their product.

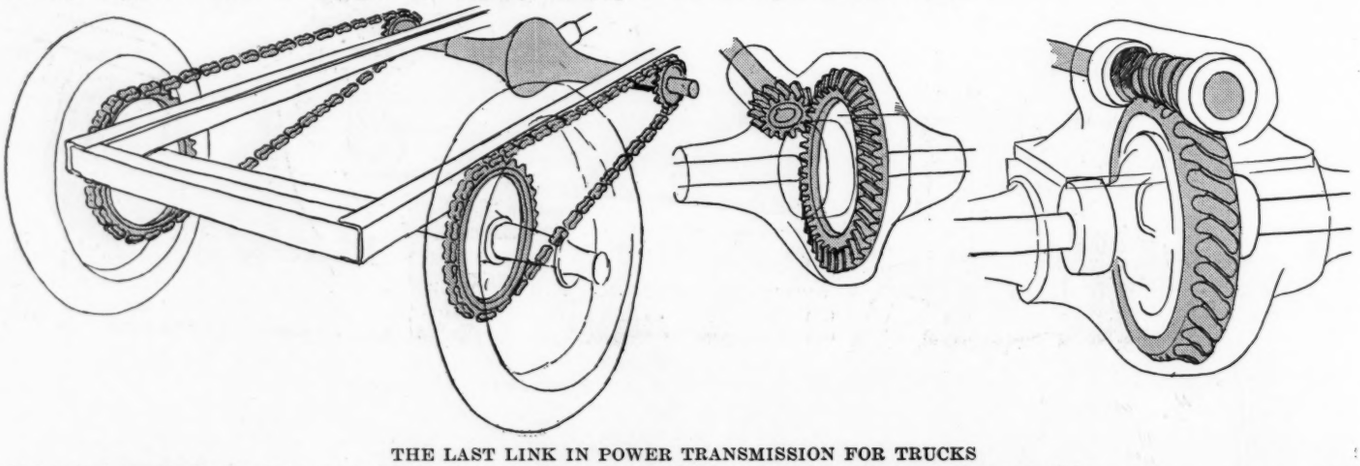
Tires for trucks have undergone some development strictly in the matter of standardization of sizes, giving fewer sizes and fewer types. The Society of Automobile Engineers, together with the National Automobile Chamber of Commerce has been working to get tire manufacturers and truck builders to agree on a few standard sizes and elminate the odd sizes and the unnecessarily large number of regular sizes.

## GRANTED CLOVERLEAF BODY PATENT

New York, Jan. 10—Special telegram—In view of a large number of three and four-passenger roadsters or cloverleaf type on the market, special interest attaches to the design patent on a body of this description granted to Elmer Apperson, Kokomo, Ind., and assigned to the Apperson Bros. Automobile Co., of that city. This design patent, which was granted January 4 on application filed August 6, 1915, is No. 48,359 and its term is 7 years. It specifies new, original and ornamental designs for motor car bodies, the constructions being streamline body for left steer chassis, passenger compartment having driver's seat and another seat with aisle between them leading to seat for one or two passengers in horseshoe-shaped compartment behind the two front seats.

## TEMPORARY PLANT FOR H. A. L.

Cleveland, O., Jan. 10—The H. A. Lozier Co., manufacturer of the H. A. L. twelve, has taken a short-time lease on the plant of the former Royal Motor Car Co. on the Lake Shore railroad tracks, just west of Gordon park. Machinery will be installed at once. Later on the company will purchase land, build a factory and equip it with machinery for the manufacture of cars.



THE LAST LINK IN POWER TRANSMISSION FOR TRUCKS

*At left is shown the double chain and jackshaft, at the center is the spiral bevel and at the left the popular worm drive*

# Motor Industry Subscribes Fortune to French War Loan

## Employes of Michelin Tire Co. Contribute More than $1,000,000 to Government in Time of Stress

PARIS, Dec. 23—Motor car factories have given considerable help in the raising of the $3,400,000,000 comprising the national loan just closed. Before the loan was announced, all the motor car factories made systematic collections of gold from their staffs, it being very difficult for men working 11 or 12-hour shifts for 6½ days a week to make a personal visit to the bank in order to exchange gold for paper money. When the loan was announced the factories undertook to receive subscriptions towards it, and in very many cases to advance money to their workmen towards the purchase of stock. There was no limit to the amount men could subscribe for, and facilities were given for repayment by weekly installments. Allowance was made for inability to make payments owing to illness, and if a workman left his employment before his stock had been redeemed, he was given the option of completing his payments or having all his deposits refunded to him. This scheme has proved very popular among mechanics, most of whom are now earning good money and are glad of the opportunity to invest profitably and safely.

The French staff of the Michelin Tire Co. has invested in this way a total of $1,010,060. As early as September, 1914, Michelin offered to loan money free of interest to any of his staff wishing to subscribe to the short term treasury notes. In June, 1915, further loans were made to the staff towards the purchase of national defense bonds, and finally the total of more than $1,000,000 had been subscribed by the staffs in France towards the recently closed war loan.

**Pay Dividends in War Stock**

This year the shareholders in the Michelin company were paid in the national war loan stock, an innovation which was accepted with general approval. All Michelin employees totally disabled in the war are given an annual life pension of $190, this, of course, being in addition to the pension given by the state. Dependents of men killed in the war are given the same amount. During the first year of the war the Michelin staffs contributed $27,600 towards the purchase of comforts for their own men serving at the front. Among Michelin's contributions to the cause of the allies are a hospital of 120 beds, for which all upkeep expenses are provided; a gift of $40,000 for the wives of drivers killed in the war; and $4,000 towards the Prince of Wales relief fund.

The Michelin factory at Clermont-Ferrand has been considerably enlarged so that the valve department can manufacture big quantities of time fuses for 75-millimeter shells. Michelin also has given very extensive financial backing to Breguet, the aeroplane manufacturer, and in conjunction with him has brought out an unusually successful type of fast bombarding machine fitted with the Renault twelve-cylinder V-type aviation motor.

Considerable pains were taken to prevent Michelin tires being passed by neutral agents into Germany. All agents in Holland were obliged to deposit a guarantee sum of $1,000 to $1,400 that they would not knowingly sell tires to Germany. One Dutch agent was discovered shipping tires into Germany, with the result that his deposit was forfeited and given to the Belgian relief fund; at the same time the agency was withdrawn. It is stated that numbers of suspicious tire contracts were refused.

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**PACKARD PARIS MANAGER RESIGNS**

Paris, Dec. 24—R. N. Goode, manager of the Paris branch of the Packard company, severs his connection with that firm on the first day of January. No arrangements have been made for a successor, and it is understood that the Paris office will be closed, at any rate temporarily.

## Maxwell Completes Non-Motor Stop Run on Coast

*Maxwell car which made world's non-motor stop run of over* **22,000** *miles*

LOS ANGELES, Jan. 8—With more than 22,000 miles to its credit, the Maxwell car, which has been participating in a non-motor-stop run since November 22 and which has shattered all existing stock model records, was given its first rest in 44½ days Wednesday morning when the arduous test was declared off although the engine was running and in excellent condition.

In the remarkable trial, the Maxwell established the following road records: 5,000 miles in 10 days; 10,000 miles in 20 days; 12,405 miles in 25 days; and 20,000 miles in 30 days. The mileage has been taken by two speedometers and the car has been under the surveilance of A. A. A. observers since the start of the test.

To a great extent, the sensational speed feature was a surprise, even to the Lord Motor Co., Southern California Maxwell distributor, which conducted the run. The car which, more than 3 years ago, set the motor non-stop figures at 12,404.9 miles, averaged around 400 miles daily. This was the schedule mapped out at first for the Maxwell but it was found, during the first day of the run, that much better speed was possible without in the least increasing the task of the motor. As a result a schedule of 500 miles daily was established and slightly exceeded.

On Friday morning, December 17, the car passed the old record. Rumors were rife of a similar attempt by a competing dealer and this caused the run to be continued.

# Motor Car Engineers Discuss Electrical Equipment

## S. A. E. Listens to Papers and Arguments on Ignition, Lighting and Starting Systems—Schroeder Tells How Lamps Are Made

NEW YORK, Jan. 7—The feature of the professional session of the Society of Automobile Engineers which was held at the Engineering Society building here yesterday was the discussion of battery versus magneto ignition. That each has its field and its well-defined advantages was the conclusion reached by the majority of members who were keenly interested in the discussion of this most pertinent factor of modern motor development. The session today was well attended and proved the fact that the concentration of the professional work in one day is the wisest course. Announcement also was made of Russell Huff's election to the presidency of the society and besides the battery-magneto discussion, valuable papers were read on the effect of the sulphur content in steel and a review of the fundamental features of lighting and starting systems.

**President's Address**

President Vandervoort in opening the meeting made his parting address as a president of the S. A. E. Mr. Vandervoort dwelt upon the accomplishments of the year and upon the outlook into the future. "Our mid-summer meeting was thrilled with enthusiasm and so successful was it that the council of the society have practically determined to standardize this form of summer meeting."

President Vandervoort extended the greetings of the Mid-West section which has just been formed with Chicago as its headquarters. He pointed out that there is a membership of 200 to draw upon and the territory covered Illinois, Iowa, Wisconsin, and a part of Indiana. He went on to review the recent meetings at Chicago at which the section was formed and also the meeting in Philadelphia at which the Pennsylvania section was added to the society.

In referring to the honor conferred upon the society by the secretary of the navy in taking two members as a part of the naval advisory board, Mr. Vandervoort mentioned the pride the society feels in taking part in this work and he promised the government the support of the Society of Automobile Engineers, should it ever desire assistance which could be rendered by the organization.

President Vandervoort then presented Russell Huff, the president-elect. Huff expressed his keen appreciation of the honor which his election has brought him. In accepting the presidency he said, "We have only scratched the surface in standardization work and yet standardization has saved millions of dollars to the industry. This work should be pushed forward. The S. A. E. has national influence and this is clearly brought out by the calls that we have had for information from such sources as the colleges, etc. There are other lines in which our activities can spread, such as the development of good roads; aeroplanes, motorboats, etc., can all be touched upon."

Henry Schroeder, engineer of the Edison Lamp Works read a very interesting paper on electric bulbs for cars, giving in detail the process of manufacture. A digest of the paper follows:

## Electric Bulbs for Motor Cars

**By Henry Schroeder, Engineer, Edison Lamp Works**

THE tungsten filament used in bulbs has several interesting characteristics. The metal tungsten has a very positive temperature coefficient of resistance, that is, increased temperatures give increased electrical resistance, which is common with metals. The resistance of the filament at its normal operating temperature is about twelve and a half times its cold resistance. Carbon, not being a metal, has a negative temperature coefficient, but the gem filament has a positive temperature coefficient, and, being a special form of carbon, is therefore often called a metallized carbon filament.

The life of a filament is very sensitive to a variation in voltage, and it is impossible to obtain an exact relation between life and efficiency. In view of the sensitiveness of bulbs to variation in candlepower and life on varying voltage, it is very important that the voltage on the bulbs be kept constant. Increasing the voltage, therefore, shortens the life of a bulb materially and decreasing the voltage materially reduces the candlepower. Tests are now being made of different motor car lighting systems under various conditions of service to ascertain the extent of the voltage variations in practice.

The candlepower of filaments can be measured in two general ways, the simpler being measuring it in a horizontal direction. This does not, however, give the average candlepower in all directions, so that candlepower is often given as the "mean spherical," the former being called the "mean horizontal" candlepower. The light-giving qualities of a headlight are dependent not alone upon the rated candlepower of the bulb, but largely on the position of the filament and the condition of the reflector. As stated, in service the candlepower of a bulb is very variable, depending on the voltage, so that instead of rating a bulb by its candlepower, which is purely nominal, it can be rated more accurately by the amperes it takes. For example, a headlight bulb can be rated better as a 2.5-ampere (not 21 candlepower) 6-8 volt bulb. It is the endeavor of bulb manufacturers, therefore, to have customers order headlight bulbs by amperes instead of candlepower.

There have been put on the market recently headlight bulbs filled with an inert gas, the object being to put a slight pressure on the filament so that it can be raised to a higher temperature without undue filament evaporation, one of the factors determining the life of a bulb. This is similar to the steam pressure in a boiler raising the boiling point of water. This gas pressure raises the temperature of rapid evaporation of the filament. The limiting temperature at which a filament can be operated is not its melting temperature, but the highest temperature that can be obtained without rapid evaporation, which so reduces the cross-section of the filament at its thinnest point that it finally burns out. Tungsten has a lower melting point than carbon, but carbon evaporates readily at temperatures much below that at which tungsten evaporates. The pressure of the gas inside the bulb when lighted is about the same as the atmospheric pressure on the outside of the bulb.

These bulbs are impractical if made with filaments of small cross-section, as the cooling effect of the circulating gas on the filament requires a great amount of electrical energy to maintain the temperature. In other words, unless the gain in candlepower (due to the higher temperature possible) is greater than the extra energy required on account of the cooling effect of the gas, there is no advantage in putting gas in a bulb, as otherwise the efficiency would be no better than with a vacuum. In the present state of the art filaments taking one ampere are the smallest practicable, and side and rear lights are therefore made only in the vacuum type. The filaments are accordingly coiled in order to present as little of the surface as possible to the cooling effect of the circulating gas.

The various steps in the manufacture of bulbs are illustrated in Fig. 2.

**Manufacture of Bulbs**

The glass bulb as received has a neck which is cut off at the flare. This piece of the neck which is cut off contains the internal strains in the glass. A hole is then melted in the glass bulb and a piece of glass tubing welded to it for the subsequent purpose of exhausting the air. For the stem a larger piece of tubing is used and one end flared out, which is afterward welded to the flare in the neck of the bulb. Two pieces of special wire are then inserted in the stem tube and the end of the tube opposite the flare welded together with the wires imbedded. These wires are called the "leading-in wires," connecting the filament with the base, and are of such a nature that their coefficient of expansion is the same as that of glass. This is necessary, as otherwise when the bulb is lighted and the glass expands, unless the leading-in wires expand at the same rate, air will leak into the bulb. Platinum was used formerly, but is used rarely at present; so there is practically no scrap value in a burned-out bulb, except for the slight amount of brass in the base.

The tungsten filament is made of pure tungsten powder formed into a slug by hydraulic pressure, holding the tungsten particles together by cohesion. This fragile slug is then put under a hood containing an inert gas so the tungsten will not oxidize and a very heavy electric current is passed through it, which heats it to a high temperature, electrically welding the tungsten powder together. The slug is then put through a rotary hammer, and formed out hot into a wire about the size of the lead in a pencil. This wire is then drawn out hot by means of diamond dies until it is of the proper cross-section. Diamond dies have to be used as tungsten is such a hard

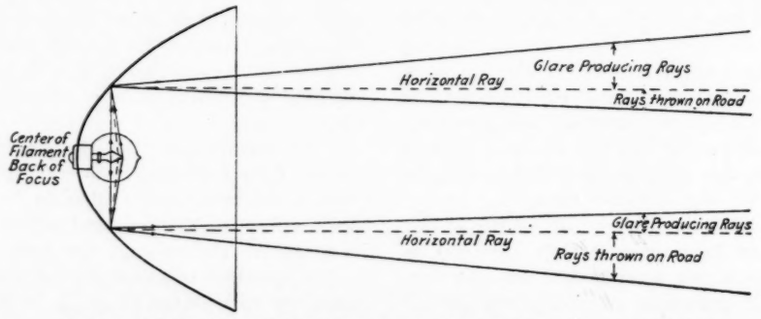



*Fig. 1—Reflection of light from an electric bulb on a parabolic reflector*

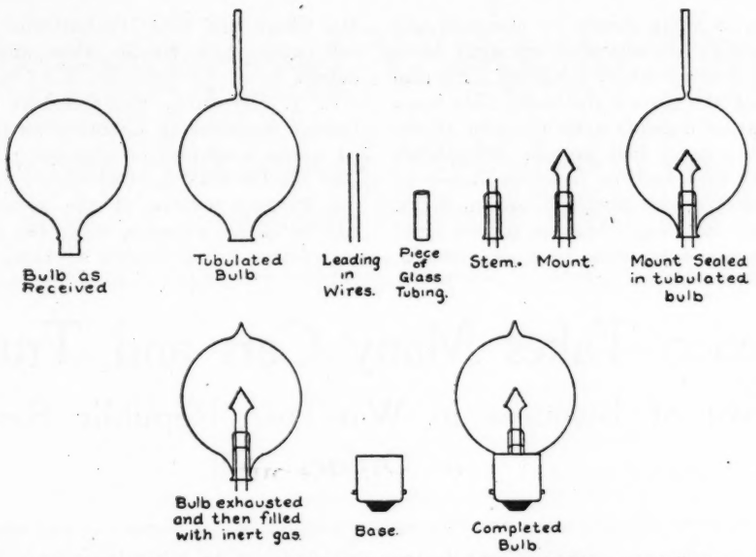



*Fig. 2—Steps in the manufacture of bulbs for electric lights on motor cars*

substance that it will soon wear out a die of any other material. The wire is then coiled into its proper from and cut to the right length for the filament desired.

The ends of the filament are then either electrically welded or pinched to the ends of the leading-in wires, making the completed mount. The mount is then put in the glass bulb and the flare on the stem welded to the flare on the neck of the bulb, making an air-tight joint. The bulb is then exhausted and in the case of a gas-filled bulb the gas put in and the glass tube melted off, leaving a tip on the bulb. The base is then fastened to the neck of the bulb by a waterproof cement, and the ends of the leading-in wires cut off and soldered to the base contacts, the bulb then being ready for shipment.

The best filament is one that is comparatively thick because it can be operated at a better efficiency than a thin one. The thicker a filament is, the more current it takes; a six-volt bulb has a much thicker filament than a twelve-volt bulb of the same wattage. On the other hand, the loss in energy due to the heat conducted away by the leading-in wires, becomes a smaller percentage of the total, the higher voltage is. From the standpoint of efficiency, therefore, there is practically no choice in bulbs for three- or six-cell systems. Bulbs for nine-cell systems are not quite so good in quality, however, as either three- or six-cell, and are somewhat more expensive to manufacture.

In any system the wiring must be large enough to carry the current without undue voltage drop, and as the voltage drop is proportional to the square of the current, very large wires must be used for low voltages. For three-cell systems, therefore, the single-wire ground return seems preferable from the bulb standpoint.

For headlight purposes the filament must be concentrated to a certain extent so as to bring it in the focus of the reflector. It is obviously impossible to make the filament a single-point source of light. The result is that every point on the surface of the reflector sends out a cone of light. This is illustrated in Fig. 1.

### Preventing Glare

In order to prevent glare, which is the intense amount of light thrown upward into the eyes of persons, the rays of each cone of light which are thrown upward must be bent down. On the other hand, too much filament concentration will produce too intense and narrow a beam with a parabolic reflector, a certain amount of spread being required to light up the sides of the road.

The focal length for the usual headlight bulbs is 13/16 inches. The focal length of the reflector in which these bulbs are used should be greater than 13/16 inches in order to allow for adjustment of the bulb. The center of the filament should preferably be back, instead of forward, of the focus of the reflector to get a spread of the beam of light, for the reason that when the center is back of the focus a greater amount of the light rays is utilized and redirected by the reflector, producing a higher beam candlepower. In this case the majority of the reflected rays diverge directly from the headlight instead of crossing each other. If the center of the filament is back of the focus, the upper part of the reflector is producing most of the glare. If, in this case, the upper part of the front glass of a headlight is covered with a translucent material, the glare will be largely reduced, but should the center of the filament be forward of the focus, this translucent material will not do the work it was intended for, as most of the glare will come from the lower part of the reflector. Similarly, devices put on a bulb to reflect the light, should be on the upper part of the bulb when the filament center is back of the focus. With gas-filled bulbs, however, this is the hottest part of the bulb.

Headlight bulbs for three-cell systems are now made for 6½ volts, which is believed to be the general average voltage at the socket on all cars having such systems and will operate satisfactorily when the circuit varies within 6-8 volts, the bulbs being so marked. Side, rear and speedometer bulbs are made for ¾ volts on account of the lesser drop in voltage on their circuits. All bulbs for six-cell systems are made for 15 volts and for nine-cell systems for 21 volts, being designed for satisfactory operation with a voltage variation of 12-16 volts and 18-24 volts respectively. Heretofore bulbs have been made exactly to the voltage a customer's fancy might dictate, but for renewal purposes it is impracticable to have so many voltage bulbs in stock in garages and automobile supply stores. It is also desirable, for self-evident reasons, that there be one standard base; the single-contact bayonet candelabra, style 1100, for use on single-wired ground-return systems seems to be the most popular at present.

Information received from eighty-five car manufacturers regarding their 1916 model cars indicates the following.

Bulbs for three-cell systems are increasing in favor, for six-cell systems decreasing in favor and for nine-cell systems remaining about constant. The single-contact base is gaining and the double contact losing in favor.

BULBS USED IN THE UNITED STATES DURING 1915

| | Fitted with Single-Contact Base | Fitted with Double-Contact Base | Total |
|---|---|---|---|
| Three-cell systems | ...6,000,000 | 2,000,000 | 8,000,000 |
| Six-cell systems | ... 700,000 | 800,000 | 1,500,000 |
| Nine-cell systems | ... ..... | 500,000 | 500,000 |
| Grand T'al. | 6,700,000 | 3,300,000 | 10,000,000 |

present time little less than one-half of them are fitted with the single-contact base. It is About three-quarters of the bulbs used for three-cell systems are fitted with single-contact base, and this amount is increasing. Of the bulbs used for six-cell systems, up to the indicated that next year nearly three-quarters of them will be so fitted. Practically all of the bulbs used for nine-cell systems have been and will be fitted with the double-contact base.

After Schroeder had completed his paper, he made a plea for the standardization of the single-wire system, stating that from the standpoint of the lamp manufacturer the single wire with its one large lead instead of two smaller ones is a much better manufacturing job. H. W. Slausson asked which type of filament had the greatest length of life to which Mr. Schroeder replied that the tungsten filament stands up very well. After the lamp is burned awhile, the lamp becomes brittle. When the lamp is out, but while the lamp is lit, it is more ductile. He stated that the carbon filament would be impossible with present day generators and besides being very inefficient, would not provide sufficient illumination. He said that the tungsten is better than any.

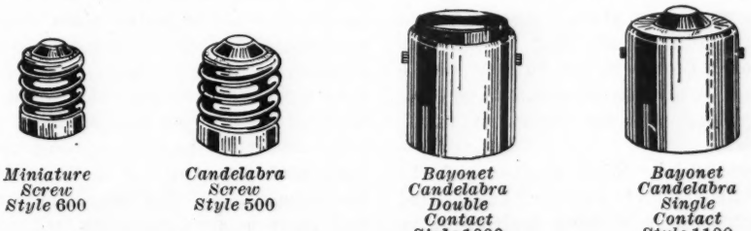
### Discuss Battery vs. Magneto

This was followed by the symposium on battery versus magneto ignition, by Alexander Churchward, Frank Conrad, electrical engineer of the Westinghouse Electric and Mfg. Co., and Francis R. Hoyt, electrical engineer, Simms Magneto Co., a synopsis of which was presented in Motor Age issue of January 6.

Glenn S. Whitten stated that he failed to see value of Mr. Churchward's classification of battery system in which he mentions three different types: that having manual advance, that having automatic and that having semi-automatic advance. The proper classification he believes is the open and closed circuit.

Frank Conrad, electrical engineer of the Westinghouse company, states that in discussing ignition problems of today it is useless to bring up as an example a four-cylinder motor running at 1,400 or 1,500 r.p.m.; the problem confronting ignition engineers of today is eight and twelve-cylinder motors running at 3,000 r.p.m. Mr. Conrad also stated that it is not true that in the magneto the heat of the spark increases as the speed of the magneto increases. In justifying the claims for battery ignition, Mr. Conrad referred to the growing number using the battery ignition system.

Wm. B. Wall, engineer of the National company, said that all those who have used both types of ignition are likely to be prejudiced in favor of the magneto. He said that he used to think magnetos were better because of the automatic advance feature, but since then he has found out that the advance is inappreciable and therefore, does not give any gain. "Of course," he went on, "the battery system



*Miniature Screw Style* 600 — *Candelabra Screw Style* 500 — *Bayonet Candelabra Double Contact Style* 1000 — *Bayonet Candelabra Single Contact Style* 1100

*Fig. 3—Types of bases for electric bulbs*

has nothing to approach the automatic advance, although I think the magneto has advantages at high speed, and I have had more horsepower output with magneto. I had credited this to the follow-up current in the magneto. We see that the magneto is a self-contained instrument, whereas the battery required auxiliaries and a generator is necessary. Furthermore, it is dependent upon the battery.

"Both battery and magneto systems require power to drive them and the details are quite alike. The magneto has most of its parts near the driving system while the battery has considerable wiring subject to troubles which arise. There is no question that the battery system has great advantages and has been decreased greatly in cost. Therefore, many are coming to use it."

L. B. Brown suggests that instead of the open circuit and closed circuit classification the battery system be divided into cam-break and spring-break classes. In analyzing the advantages of the closed circuit, he stated that that if an ignition device was being designed for a single cylinder motor the period of contact of the primary would be made as short as possible.

**Does Not Believe in Guarantee**

He said that these remarks should not apply to the stationary coil design on which there could be as many turns of secondary wire as were wanted. Regarding the battery situation, Mr. Libby said it was quite important; that the present tendency caused adjustments in battery exchange in the same way that adjustments are made on tires; is a dangerous practice. It results in the owner not giving attention to the battery, since he believed that for $5 he can secure a new battery. It often happens that owners will neglect the battery during the spring and summer and the result is that in the winter time, when the capacity of the battery is only a limited percentage of the total rated capacity, the motor will not start. As an illustration to bring out the force of this statement, he stated that 3 degrees above 0 Fahrenheit, the capacity of the battery, is only 50 per cent of the rating.

Francis R. Hoyt took exception to Mr. Conrad's statement in saying that the spark heat does not increase with the speed on magneto ignition. He stated that this was entirely a matter of individual design and could be arranged to suit the engineer. More heat is not furnished simply because it is not necessary and not because it cannot be given. Another point which he brought out: that an error in timing of 1 degree in the battery system is 2 degrees on the crankshaft, whereas generally magnetos are driven at crankshaft speed.

Herbert Chase, chief engineer of the Automobile Club of America, emphasized the point that in making ignition tests, the actual position of the spark in the cylinder is what should be observed and not merely the position of the spark lever on the steering wheel quadrant. He also said that Mr. Hoyt's statement that flame propagation depends upon the size of the spark, has never been proved. He pointed out that once ignition is accomplished no more effect occurs from a follow-up spark. Speaking from experience as service manager at the Automobile Club of America, Mr. Chase said that the batteries on the car cause more trouble than any other detail.

C. T. Kettering, vice-president of the Dayton Engineering Laboratories Co., cited a few examples of advance. He said that the Cadillac eight at 3,000 r.p.m. and the Packard twelve at the same speed had 28 degree advance, while the Hudson six at 3,000 has 27 degree advance.

# Mexico Takes Many Cars and Trucks

## Revival of Business in War-Torn Republic Results in Orders

MONTEREY, Mexico, Jan. 10—One of the several good evidences that the industrial and business interests of Mexico are of the belief that a period of peace is in sight in this country is the large number of orders for motor cars and trucks that now are being placed. For the most part these vehicles are being sent into Mexico by distributors in San Antonio and El Paso.

With the renewal of mining operations in the states of Chihuahua, Nuevo Leon, Coahuila and of the more central and southern parts of the republic the demand for motor trucks with which to transport ores and supplies is showing a big increase. A few days ago a large mining concern at Parral, State of Chihuahua, purchased eight Kissel trucks of large size from an El Paso dealer. The shipment went forward promptly and it is said to be the forerunner of several other large orders from the same mining district. Other orders for trucks have been sent to the United States from mining companies in Monterey, Santa Eulalia, Velardena, Santa Barbara and other points.

American-made trucks promise to quickly come into general use in the oil districts in the Gulf coast region adjacent to Tampico. Considerable attention to building good roads in the oil producing territory has been given during the last few years, and it is possible to operate trucks to good advantage, it is claimed. Most of the motor trucks that go into that region are purchased in New York and the east and are transported direct to Tampico by water. The same is also largely true as to passenger cars that are in use there.

Advices from the City of Mexico show that a reawakening of the motor car and accessory trade is taking place there. Several establishments for their sale have been opened and orders placed for the necessary stocks. Many cars that were placed in "hiding" during the period of pillage and confiscation have reappeared upon the streets of the capital and other cities of the country, and the demand for repairs and parts is showing a big and constant increase.

Several of the motor car and accessory dealers of border towns in Texas have been making scouting visits to Monterey and other cities of the country during the last 2 or 3 weeks, and these men express themselves as exceedingly well pleased with the prospects for business in their respective lines.

Another interesting feature that is closely related to the use of motor vehicles in Mexico is the gasoline situation.

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**NEW DETROITER SIX AT $1,098**

Detroit, Mich., Jan. 11—The Detroiter Motor Car Co., announces a new Detroiter six-45 which has been undergoing experimental tests and has just been completed. Although not ready for the New York show it will be exhibited for the first time at the Chicago show beginning January 22.

The new six has a five-passenger touring body and especially wide tonneau and follows the conventional streamline design. It is made to sell at $1,098. The six-cylinder unit powerplant is a Continental and has a bore of 3¼ inches and a stroke of 4½ inches. Cylinders are block-cast with detachable heads. Valves are inclosed and the lubrication system is a combination of the force-feed and constant-level splash. The electrical equipment includes an Auto-Lite, two-unit starting and lighting system with a Connecticut distributer separate from the generator. Cooling is by centrifugal pump.

The clutch is a multiple disk with Raybestos-faced plates, and the gearset is selective, with three speeds forward and one reverse. Drive is on the Hotchkiss principle and torque is taken through the springs. The rear axle is three-quarter floating and the differential is carried on large ball-bearings. Compound brakes are used, the service brake being external contracting and the emergency internal expanding.

Tires are 33 by 4 non-skids in the rear, and the wheelbase is 118 inches. Upholstery is of buffed leather and equipment includes a one-man top with side curtains and clear-vision windshield set at an angle, Stewart speedometer, electric horn and tools.

# Commercial Vehicle Directory for 1916

## Names and Addresses of 248 Makers of Gasoline, Steam and Electric Motor Business Wagons With the Load Capacities

| Name | Manufacturer | Address | MODELS IN TONS CAPACITY (Figures refer to capacity, not number of models) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Under ½ | ½ | ¾ | 1 | 1½ | 2 | 2½ | 3 | 3½ | 4 | 5 | 5½ | 6 | 6½ | 7 and over |
| **Gasoline Vehicles** | | | | | | | | | | | | | | | | | |
| **A. & B** | American & British Mfg. Co | Providence, R. I | | | | | | | | 3 | | | 5 | | | | |
| A. & R | Abendroth & Root Mfg. Co | Newburgh, N. Y | | | | | | | | 3 | | 4 | 5 | | | | |
| **Acme** | Cadillac Auto Truck Co | Cadillac, Mich | | | | | | 2 | | | | | | | | | |
| **Adams** | Adams Truck, Fdy. & Machine Co | Findlay, Ohio | | | | 1 | 1½ | | 2½ | | | | | | | | |
| **Acason** | Acason Motor Truck Co | Detroit, Mich | | | | | | 2 | | | 3½ | | | | | | |
| Allis-Chalmers | Allis-Chalmers Mfg. Co | Milwaukee, Wis | | | | | | | | | | | 5 | | | | |
| **Armleder** | O. Armleder Co | Cincinnati, Ohio | | | | | | 2 | 2½ | | 3½ | | | | | | |
| **Atterbury** | Atterbury Motor Car Co | Buffalo, N. Y | | | | 1 | | 2 | | | 3½ | | | | | | |
| Auglaize | Auglaize Motor Car Co | New Bremen, Ohio | | | ¾ | | | | | | | | | | | | |
| **Autocar** | Autocar Co | Ardmore, Pa | | | | | 1½ | 2 | | | | | | | | | |
| **Available** | Available Truck Co | Chicago, Ill | | | | 1 | | 2 | | | 3½ | | | | | | |
| **Avery** | Avery Co | Peoria, Ill | | | | 1 | | 2 | | 3 | | | 5 | | | | |
| **Barker** | C. L. Barker | Norwalk, Conn | | | | 1 | | 2 | | | | | | | | | |
| **Bauer** | Bauer Machine Wks. Co | Kansas City, Mo | | ½ | ¾ | | | | | | | | | | | | |
| **Beach Creek** | Beach Creek Truck & Auto Co | Beach Creek, Pa | | | | | | | | 3 | | | | | | | |
| Bell | Bell Motor Car Co | York, Pa | | ½ | | | | | | | | | | | | | |
| **Bessemer** | Bessemer Motor Truck Co | Grove City, Pa | | | ¾ | | 1½ | 2 | | | 3½ | | | | | | |
| **Blair** | Blair Motor Truck Co | Newark, Ohio | | | | | | 2 | | 3 | | 4 | 5 | | | | |
| Board | B. F. Board Motor Truck Co | Alexandria, Va | | | | | | | | | | | | | | | |
| **Bollstrom** | Bollstrom Products Sales Co | Battle Creek, Mich | | | ¾ | | | | | | | | | | | | |
| **Brasie** | Brasie Motor Truck Co | Minneapolis, Minn | ¼ | | | | | | | | | | | | | | |
| Brennan | Brennan Mfg. Co | Syracuse, N. Y | | | | | | | | | | | | | | | |
| **Brinton** | Chester County Motor Co | Coatesville, Pa | | ½ | | | | | 2½ | | | | | | | | |
| **Briscoe** | Briscoe Motor Co | Jackson, Mich | | ½ | | | | | | | | | | | | | |
| **Brockway** | Brockway Motor Wagon Co | Cortland, N. Y | | | | 1¼ | | 2 | | | | | | | | | |
| Bucklen | H. E. Bucklen, Jr., Motor Truck Co | Elkhart, Ind | | | ¾ | | 1½ | | 2½ | | | | | | | | |
| **Buick** | Buick Motor Co | Flint, Mich | | | ¾ | | | | | | | | | | | | |
| **Burford** | H. G. Burford Co | Fremont, Ohio | | | | | | 2 | | | 3½ | | | | | | |
| Carlton | Carlton-Hill Motor Car Co | Rutherford, N. J | | | | | | | | | | | | | | | |
| Carroll | Carroll Motor Car Co | Strassburg, Pa | | | | | | | | | | | | | | | |
| Casey | F. A. Casey | Billerica, Mass | | ½ | | | | | | | | | | | | | |
| **Chase** | Chase Motor Truck Co | Syracuse, N. Y | | | | 1 | | 2 | | | 3½ | | | | | | |
| **Coleman** | Coleman Carriage & Harness Co | Ilion, N. Y | | | | | | 2 | | 3 | | | | | | | |
| Columbia | Columbia Motor Truck & Trailer Co | Pontiac, Mich | | | | | | 2 | | | | | | | | | |
| **Commerce** | Commerce Motor Car Co | Detroit, Mich | | | ¾ | | | | | | | | | | | | |
| **C. T** | Commercial Truck Co. of America | Philadelphia, Pa | | | | | | | | | 3½ | | 5 | | | | T |
| **Continental (C)** | Continental Motor Truck Co | Chicago, Ill | | | | 1 | 1½ | 2 | | | 3½ | | | | | | |
| Continental (S) | Continental Truck Mfg. Co | Superior, Wis | | | | | 1½ | | | 3 | | | | | | | |
| **Corbitt** | Corbitt Automobile Co | Henderson, N. C | | | | 1 | | 2 | | | | | | | | | |
| **Couple-Gear** | Couple-Gear Freight Wheel Co | Grand Rapids, Mich | | | | | | | | | 3½ | | 5 | | | | |
| Crawford | Crawford Automobile Co | Hagerstown, Md | | | | | | | | 3 | | | | | | | |
| **Croce** | Croce Automobile Co | Asbury Park, N. J | | ½ | | | 1½ | | 2½ | | | | | | | | |
| **Crowther** | Crowther Motor Co | Philadelphia, Pa | | ½ | | | | | | | | | | | | | |
| Crown | Crown Commercial Car Co | N. Milwaukee, Wis | | | ¾ | | 1½ | | 2½ | | | | | | | | |
| Curtis | Pittsburgh Machine Tool Co | Braddock, Pa | | | | | | 2 | | 3 | | | | | | | |
| Dain | Dain Mfg. Co | Ottumwa, Iowa | | | | 1 | | | | | | | | | | | |
| **Dart** | Dart Motor Truck Co | Waterloo, Iowa | | | ¾ | 1 | | 2 | 2½ | | | | | | | | |
| **Dayton** | Durable Dayton Truck Co | Dayton, Ohio | | | | | | 2 | | | 3½ | | 5 | | | | 7½ |
| **DeKalb** | DeKalb Wagon Wks | DeKalb, Ill | | | | | 1½ | | 2½ | | | | | | | | |
| **Denby** | Denby Motor Truck Co | Detroit, Mich | | | ¾ | 1 | 1½ | 2 | | | | | | | | | |
| **Detroit** | Detroit Commercial Car Co | Pontiac, Mich | | ½ | | | | | | | | | | | | | |
| **Diamond-T** | Diamond-T Motor Car Co | Chicago, Ill | | | ¾ | | 1½ | 2 | | | 3½ | | | | | | |
| **Dispatch** | Dispatch Motor Car Co | Minneapolis, Minn | | ½ | | | | | | | | | | | | | |
| **Doane** | Doane Motor Truck Co | San Francisco, Cal | | | | | | | | | | | | | 6 | | |
| **Dorris** | Dorris Motor Car Co | St. Louis, Mo | | | ¾ | | | 2 | | | | | | | | | |
| Duffy | Duffy Bros. Motor Truck Co | San Francisco, Cal | | | | | | | | | | | | | | | |
| **Duplex** | Duplex Power Car Co | Charlotte, Mich | | | | | | 2 | | 3 | | | | | | | |
| Durocar | Amalgamated Motors Corp | Alhambra, Cal | | ½ | | | | | | | | | | | | | |
| **Duryea** | Duryea Laboratories | Philadelphia, Pa | | ½ | | | | | | | | | | | | | |
| **Dominion Tractor** | Dominion Motor Truck Co | Detroit, Mich | | | | | | | | | | | | | 6 | | T |
| Eastern | Eastern Power Truck Co | Providence, R. I | | | | | | | | | | | | | | | |
| Elbert | Elbert Motor Car Co | Tacoma, Wash | | | | | | | | | | | | | | | |
| Elmira | Elmira Commercial Car Co | Elmira, N. Y | | | | | | | | | | | | | | | |
| Erie | Erie Motor Truck Mfg. Co | Erie, Pa | | | | | | | | | | | | | | | |
| **Falcon** | Falcon Motor Truck Co | Detroit, Mich | | ½ | | | | | | | | | | | | | |
| **Fargo** | Fargo Motor Car Co | Chicago, Ill | | | | 1 | | 2 | | | | | | | | | |
| Fawick | Fawick Motor Car Co | Sioux Falls, S. D | | ½ | ¾ | 1 | | 2 | | | | | | | | | |
| **Federal** | Federal Motor Truck Co | Detroit, Mich | | | | | 1½ | | | | 3½ | | | | | | |
| Forschler | Phillip Forschler Wagon Co | New Orleans, La | | | | | 1½ | | | | | | | | | | |
| **F.W.D** | Four Wheel Drive Auto Co | Clintonville Wis | | | | | 1½ | | | 3 | | | 5 | | | | |
| Franklin | Franklin Commercial Truck Co | Franklin, Pa | | | | | | | | | | | | | | | |
| **Gabriel** | Gabriel Auto Co | Cleveland, Ohio | | | ¾ | 1 | 1½ | | | | | | | | | | |
| **Garford** | Garford Motor Truck Co | Lima, Ohio | | | ¾ | 1 | 1½ | 2 | | | | | 5 | | 6 | | |
| Gary | Gary Motor Truck Co | Gary, Ind | | | ¾ | 1 | 1½ | 2 | | | | | | | | | |
| **G. A. Schacht** | G. A. Schacht Motor Truck Co | Cincinnati, Ohio | | | | | | 2 | | 3 | | | | | | | |
| Gay | S. G. Gay Co | Ottawa, Ill | | | | | | | | | | | | | | | |
| **Geneva** | Geneva Wagon Co | Geneva, N. Y | | | ¾ | | | | | | | | | | | | |
| **Gersix** | Gerlinger Motor Car Co | Portland, Ore | | 2½ | | | | | | | | | | | | | |
| Globe | Globe Furniture Co | Northville, Mich | | | | | | | | | | | | | | | |
| **G.M.C** | General Motors Truck Co | Pontiac, Mich | | | ¾ | 1¼ | 1½ | 2 | | | 3½ | | 5 | | | | |

Heavy type represents vehicles whose specifications are given in this issue.

# Directory of Commercial Vehicles for 1916 with Capacities and Makers

| Name | Manufacturer | Address | MODELS IN TONS CAPACITY *Figures refer to capacity, not number of models* | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Under ½ | ½ | ¾ | 1 | 1½ | 2 | 2½ | 3 | 3½ | 4 | 5 | 5½ | 6 | 6½ | 7 and over |
| **Gramm-Bernstein** | Gramm-Bernstein Co | Lima, Ohio | | | | 1 | 1½ | | 2½ | | 3½ | | | | 6 | | |
| Great Southern | Great Southern Automobile Co | Birmingham, Ala | | | | | | 2 | | | | 4 | | | | | |
| **G.V.-Mercedes** | General Vehicle Co | Long Island City, N. Y | | | | | | | | | | | | | 6 | | |
| Hahn | Hahn Motor Truck Co | Hamburg, Pa | | | | | | | | | | | | | | | |
| **Hall** | Lewis-Hall Iron Wks | Detroit, Mich | | | | | | | | | 3½ | | 5 | | | | |
| Handy Wagon | Auburn Motor Chassis Co | Auburn, Ind | ¼ | ½ | | | | | | | | | | | | | |
| **Hanger** | C. F. Hanger Co | Cleveland, Ohio | | ½ | | | | | | | | | | | | | |
| Harrison | Robert Harrison Co | So. Boston, Mass | | | | | | | | | | | | | | | |
| **Harvey** | Harvey Motor Truck Co | Harvey, Ill | | | | | | | | | 3½ | | 5 | | | | |
| **Henderson** | Henderson Bros | North Cambridge, Mass | | | ¾ | 1 | | | | | | | | | | | |
| Hercules | Hercules Motor Truck Co | So. Boston, Mass | | | | | | | | | | | | | | | |
| **Hoadley** | Hoadley Bros | Gosport, Ind | | | | | | 2 | | | | | | | | | |
| **Horner** | Detroit-Wyandotte Motor Co | Wyandotte, Mich | | | | | 1½ | 2 | | 3 | | | 5 | | | | |
| Haughton | Haughton Sulky Co | Marion, Ohio | | | | 1 | | | | | | | | | | | |
| Howard | R. G. Howard | Boston, Mass | | | ¾ | | | | | | | | | | | | |
| Hurlburt | Hurlburt Motor Truck Co | New York City | | | | 1 | | 2 | | | 3½ | | | | | | |
| **Hannibal** | Hannibal Motor Car Co | Hannibal, Mo | | ½ | | | | | | | | | | | | | |
| **I. H. C.** | International Harvester Corp | Akron, Ohio | | ½ | ¾ | 1 | | | | | | | | | | | |
| **Independent** | Independent Motors Corp | Port Huron, Mich | | | ¾ | | | 2 | | | | | | | | | |
| **Indiana** | Harwood-Barley Mfg. Co | Marion, Ind | | | | 1 | 1½ | | | 3 | | | 5 | | | | |
| Iowa | Iowa Motor Truck Co | Ottumwa, Iowa | | | | 1 | 1½ | | | | | | | | | | |
| **Jeffery** | Thomas B. Jeffery Co | Kenosha, Wis | | | | | | 2 | | | | | | | | | |
| Kanawha | Kanawha Auto Truck Co | Charleston, W. Va | | | | | | | | | | | | | | | |
| **Kearns** | Kearns Motor Car Co | Beavertown, Pa | ¼ | ½ | | | | | | | | | | | | | |
| **Kelly-Springfield** | Kelly-Springfield Motor Truck Co | Springfield, Ohio | | | | 1 | 1½ | 2 | | 3 | | 4 | 5 | | 6 | | |
| **King** | A. R. King Mfg. Co | Kingston, N. Y | | | | | | | | | 3½ | | | | | | |
| **Kisselkar** | Kissel Motor Car Co | Hartford, Wis | | ½ | | 1 | | 2 | | 3 | | 4 | | | 6 | | |
| **Kleiber** | Kleiber Co., Inc | San Francisco, Cal | | | | | 1½ | | 2½ | | 3½ | | 5 | | | | |
| **Knickerbocker** | Knickerbocker Motor Truck Co | New York City | | | | | | 2 | | | 3½ | | | | | | |
| **Knox Tractor** | Knox Motors Associates | Springfield, Mass | | | | | | | | | | | | | | | T |
| **Koehler** | H. J. Koehler S. G. Co | Newark, N. J | | | | 1 | | | | | | | | | | | |
| Kopp | Kopp Motor Truck Co | Buffalo, N. Y | | | | | 1½ | | | 3 | | | 5 | | | | |
| **Kosmath** | Kosmath Co | Detroit, Mich | | ½ | | | | | | | | | | | | | |
| **Krebs** | Krebs Commercial Car Co | Clyde, Ohio | | | ¾ | 1 | | 2 | | 3 | | | | | | | |
| **Lambert** | Buckeye Mfg. Co | Anderson, Ind | | ½ | | 1 | | 2 | | | | | | | | | |
| **Landshaft** | William Landshaft & Son | Chicago, Ill | | | | 1 | | 2 | | | | | | | | | |
| **Lange** | Lange Motor Truck Co | Pittsburgh, Pa | | | | 1 | | 2 | | | | | | | | | |
| **Larrabee** | Larrabee-Deyo Motor Truck Co | Binghamton, N. Y | | | | | 1½ | | 2½ | | | | | | | | |
| Lenox | Lenox Motor Car Co | Boston, Mass | | | | | | | | | | | | | | | |
| Lima | Lima Light Car Mfg. Co | Lima, Ohio | | ½ | | | | | | | | | | | | | |
| **Lippard-Stewart** | Lippard-Stewart Motor Car Co | Buffalo, N. Y | | ½ | ¾ | 1 | 1½ | 2 | | | | | | | | | |
| **Little Giant** | Chicago Pneumatic Tool Co | Chicago, Ill | | | ¾ | | 1½ | 2 | | | | | | | | | |
| **Lincoln** | Lincoln Motor Truck Co | Detroit, Mich | | | ¾ | | | | | | | | | | | | |
| **Locomobile** | Locomobile Co. of America | Bridgeport, Conn | | | | | | | | 3 | | 4 | | | | | |
| Lord Baltimore | Lord Baltimore Motor Truck Co | Baltimore, Md | | | | 1 | | 2 | | | | | | | | | |
| **Lombard** | Lombard Auto Tractor-Truck Corp | New York City | | | | | | | | | | | 5 | | | | |
| **Maccar** | Maccar Co | Scranton, Pa | | | | 1 | | 2 | | | 3½ | | | | | | |
| **Mack** | International Motor Co | New York City | | | | 1 | 1½ | 2 | | | 3½ | | | 5½ | | | 7½ T |
| **Mais** | Mais Motor Truck Co | Indianapolis, Ind | | | | | 1½ | 2 | | 3 | | 4 | | | | | |
| **Martin** | Martin Carriage Wks | York, Pa | | | | 1 | | 2 | 2½ | | | 4 | | | | | |
| **Menominee** | D. F. Poyer Co | Menominee, Mich | | | ¾ | 1½ | | 2 | | | | | | | | | |
| **Mercury** | Mercury Mfg. Co | Chicago, Ill | | ½ | | | | | | | | | | | | | |
| **Mercury-Bulley Tractor** | Mercury Mfg. Co | Chicago, Ill | | | | | | | | | | | | | | | T |
| Metz | Metz Co | Waltham, Mass | | | | ½ | | | | | | | | | | | |
| **Modern** | Bowling Green Motor Car Co | Bowling Green, Ohio | | | | 1 | 1½ | 2 | | | 3½ | | | | | | |
| **Mogul** | Mogul Motor Truck Co | St. Louis, Mo | | | | | 1½ | 2 | 2½ | | 3½ | | | | | | |
| Monitor | Monitor Automobile Wks | Janesville, Wis | | ½ | | 1 | | | | | | | | | | | |
| **Moon** | Joseph W. Moon Buggy Co | St. Louis, Mo | | | | | 1½ | | | | | | | | | | |
| **Moore** | Pacific Metal Products Co | Torrence, Cal | | | | | | | 2½ | | | | 5 | | | | |
| **Moreland** | Moreland Motor Truck Co | Los Angeles, Cal | | | | 1 | 1½ | | 2½ | | | 4 | | | | | |
| **Morton** | Morton Truck & Tractor Co | Harrisburg, Pa | | | | | | | | 3 | | | | | | | |
| Mohawk | Mohawk Motor Truck Co | Ravenna, Ohio | | | | | | | | | | | | | | | |
| Natco | National Motor Truck Co | Bay City, Mich | | | | 1 | | | | | | | | | | | |
| **Nelson & LeMoon** | Nelson & LeMoon | Chicago, Ill | | | | 1 | | 2 | | 3 | | | | | | | |
| **Netco** | New England Truck Co | Fitchburg, Mass | | | | | 1½ | 2 | | | | | | | | | |
| Nevada | Nevada Mfg. Co | Nevada, Iowa | | | | | | | | 3 | | | | | | | |
| **New York** | Tegetmeier & Reipe | New York City | | | | | 1½ | | | | | | | | | | |
| O. K. | O. K. Motor Truck Co | Detroit, Mich | | | | 1½ | | | | | | | | | | | |
| Old Hickory | Kentucky Wagon Mfg. Co | Louisville, Ky | | | | 1½ | | | | | | | | | | | |
| **Old Reliable** | Old Reliable Motor Truck Co | Chicago, Ill | | | | | 1½ | 2 | | | | 4 | 5 | | 6 | | |
| **Overland** | Willys-Overland Co | Toledo, Ohio | ⅜ | | | | | | | | | | | | | | |
| **Packard** | Packard Motor Car Co | Detroit, Mich | | | | 1 | 1½ | 2 | | 3 | | 4 | | | | | |
| **Palmer** | Palmer-Meyer Motor Car Co | St. Louis, Mo | | | | 1 | | 2 | | | | | | | | | |
| **Palmer-Moore** | Palmer-Moore Co | Syracuse, N. Y | | | ¾ | 1 | | | | | | | | | | | |
| **Paulding** | St. Louis Motor Truck Co | St. Louis, Mo | | | ¾ | 1 | 1½ | 2 | | | | | | | | | |
| **Peerless** | Peerless Motor Car Co | Cleveland, Ohio | | | | | | 2 | | 3 | | 4 | 5 | | 6 | | |
| **Phoenix Centiped** | Phoenix Mfg. Co | Eau Claire, Wis | | | | | | | | | | | | | | | |
| **Pierce-Arrow** | Pierce-Arrow Motor Car Co | Buffalo, N. Y | | | | | | 2 | | | | | 5 | | | | |
| Piercy | Hub Motor Truck Co | Columbus, Ohio | | | | | | | 2½ | | | | | | | | |
| **Reo** | Reo Motor Truck Co | Lansing, Mich | | | ¾ | | | 2 | | | | | | | | | |
| **Republic** | Republic Motor Truck Co | Alma, Mich | | | ¾ | 1 | | 2 | | 3 | | | | | | | |
| Robinson | Golden West Motors Co | Sacramento, Cal | | | | | | 2 | | | | | | | | | |
| Rockford | Rockford Motor Truck Co | Rockford, Ill | | | | | | | | | | | | | | | |
| **Rowe** | Rowe Motor Co | Downingtown, Pa | | | | 1 | | 2 | | 3 | | | 5 | | | | |
| **Royal** | Royal Motor Truck Co | New York City | | | | | | | | | 3½ | | 5 | | 6 | | |
| **R.-S.** | Reading-Standard Co | Reading, Pa | ½ | | | | | | | | | | | | | | |
| **Salvador** | Mansur Motor Truck Co | Haverhill, Mass | | | | | | 2 | | | | | | | | | |
| **Sandow** | Sandow Truck Co | Chicago, Ill | | | | | 1½ | 2 | | 3 | | | | | | | |
| **Sanford** | Sanford Motor Truck Co | Syracuse, N. Y | | | ¾ | 1 | | 2 | | | | | | | | | |
| **Saurer** | International Motor Co | New York City | | | | | | | | | | | 5 | | | 6½ | |
| **Saxon** | Saxon Motor Co | Detroit, Mich | ½ | | | | | | | | | | | | | | |

Heavy type represents vehicles whose specifications are given in this issue.

# Directory of Commercial Vehicles for 1916 with Capacities and Makers

| Name | Manufacturer | Address | MODELS IN TONS CAPACITY (Figures refer to capacity, not number of models) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Under ½ | ½ | ¾ | 1 | 1½ | 2 | 2½ | 3 | 3½ | 4 | 5 | 5½ | 6 | 6½ | 7 and over |
| Schleicher | Schleicher Motor Vehicle Co. | New York City | | | | | | 2 | | 3 | | | 5 | | | | |
| **Selden** | Selden Motor Vehicle Co. | Rochester, N. Y. | | | | 1 | | 2 | | | 3½ | | | | | | |
| **Service** | Service Motor Truck Co. | Wabash, Ind. | | | | 1 | 1½ | 2 | | | 3½ | | 5 | | | | |
| Siebert | Siebert Motor Truck Co. | Toledo, Ohio | | | ¾ | | | | | | | | | | | | |
| **Signal** | Signal Motor Truck Co. | Detroit, Mich. | | | | 1 | 1½ | 2 | | | 3½ | | | | | | |
| Sphinx | Sphinx Motor Car Co. | York, Pa. | | ½ | | | | | | | | | | | | | |
| **South Bend** | South Bend Motor Car Wks. | South Bend, Ind. | | | ¾ | | 1½ | 2 | | | 3½ | | | | | | |
| **Standard** | Standard Motor Truck Co. | Detroit, Mich. | | | | | | 2 | | | 3½ | 4 | 5 | | | | |
| **Standard Tractor** | Standard Tractor Co. | Brooklyn, N. Y. | | | | | | | | | | | | | 6 | | 10 |
| **Stearns** | F. B. Stearns Co. | Cleveland, Ohio | | | | | | | | | | | 5 | | | | |
| Steele | W. M. Steele | Worcester, Mass. | | | | | | 2 | | 3 | | 4 | 5 | | | | |
| **Stegeman** | Stegeman Motor Car Co. | Milwaukee, Wis. | | | | | 1½ | | 2½ | | 3½ | | | | | | |
| **Sterling** | Sterling Motor Truck Co. | Milwaukee, Wis. | | | ¾ | | | 2 | | | 3½ | | 5 | | | | 7 |
| **Stewart (B)** | Stewart Motor Corp. | Buffalo, N. Y. | | | ¾ | 1½ | | | | | | | | | | | |
| **Stewart (C)** | Stewart Iron Wks. | Covington, Ky. | | | | 1 | | | | | | | | | | | |
| **Studebaker** | Studebaker Corp. | Detroit, Mich. | | | ¾ | 1 | | | | | | | | | | | |
| **Sullivan** | Sullivan Motor Car Co. | Rochester, N. Y. | | | | | 1½ | 2 | | | | | | | | | |
| **Superior** | E. G. Willingham's Sons | Atlanta, Ga. | | | | 1 | | 2 | | | | | | | | | |
| **Tiffin** | Tiffin Wagon Co. | Tiffin, Ohio | | | ¾ | 1 | 1½ | 2 | | | | | 5 | | 6 | | |
| Toeppner | Toeppner Bros. | Bay City, Mich. | | | | | | | | | | | | | | | |
| Toledo | Toledo Motor Truck Co. | Toledo, Ohio | | | | | | | | | | | | | | | |
| **Tower** | Tower Motor Truck Co. | Greenville, Mich. | | | | | | 2 | | | | | | | | | |
| Trabold | Trabold Motor Mfg. Co. | Johnstown, Pa. | | | | 1 | | 2 | | 3 | | | | | | | |
| **Transit** | Transit Motor Car Co. | Louisville, Ky. | | | | 1 | | 2 | | | 3½ | | 5 | | | | |
| **Transport Tractor** | Transport Tractor Co. | Long Island City, N. Y. | | | | | | | | | | | 5 | | | | T |
| **Trumbull** | Trumbull Motor Car Co. | Bridgeport, Conn. | ¼ | | | | | | | | | | | | | | |
| **Twin City** | Brasie Motor Car Co. | Minneapolis, Minn. | | | | 1 | | 2 | | | | | | | | | |
| Tulsa | Tulsa Automobile & Mfg. Co. | Tulsa, Okla. | | | | | | | | | | | | | | | |
| **Universal** | Universal Service Co. | Detroit, Mich. | | | | | 1½ | 2 | | 3 | | | | | | | |
| **United** | United Motor Truck Co. | Grand Rapids, Mich. | | | | | 1½ | 2 | | | 3½ | | 5 | | | | |
| **U. S.** | United States Motor Truck Co. | Cincinnati, Ohio | | | | | | 2 | | | 3½ | | 5 | | | | |
| Van Winkle | Van Winkle Motor Truck Co. | Atlanta, Ga. | | | | | | | | | | | | | | | |
| **Velie** | Velie Motor Vehicle Co. | Moline, Ill. | | | | | 1½ | | | | 3½ | | | | | | |
| **Vim** | Vim Motor Truck Co. | Philadelphia, Pa. | | ½ | | | | | | | | | | | | | |
| **Voltz** | Voltz Bros. | Chicago, Ill. | | | | | | | | 3 | | | 5 | | | | |
| **Vulcan** | Driggs-Seabury Ordnance Co. | Sharon, Pa. | | | | | | 2 | | 3 | | | 5 | | | | |
| **Walter** | Walter Motor Truck Co. | New York City | | | | | | | | | | | 5 | | 6 | | 7½–12 |
| **Watson** | Watson Wagon Co. | Canastota, N. Y. | | | | | | | | | | | 5 | | | | |
| Ware | Twin City Four Wheel Drive Co. | St. Paul, Minn. | | | | | | | | 3 | | | | | | | |
| Warren | Warren Motor Truck Co. | Warren, Ohio | | | | | | | | | | | | | | | |
| Washington | Washington Motor Car Co. | Hyattsville, Md. | | | | | | | | | | | 5 | | 6 | | 7 |
| Weier-Smith | Weier-Smith Truck Co. | Birmingham, Mich. | | | | | 1½ | | | | | | | | | | |
| West Coast | West Coast Wagon Co. | Tacoma, Wash. | | | | | | | | | | | | | | | |
| **White** | White Co. | Cleveland, Ohio | | | ¾ | | 1½ | | | 3 | | | 5 | | | | |
| **Wichita** | Wichita Falls Motor Co. | Wichita Falls, Texas | | | | 1 | 1½ | 2 | | | 3½ | | | | | | |
| **Wilcox** | H. E. Wilcox Motor Co. | Minneapolis, Minn. | | ½ | ¾ | 1 | 1½ | | | | | | | | | | |
| **Wilson** | J. C. Wilson Co. | Detroit, Mich. | | | | | | 2 | | | | | | | | | |
| Wisconsin | Myers Machine Co. | Sheboygan, Wis. | | | ¾ | 1 | | 2 | | | | | | | | | |
| **Witt-Will** | Witt-Will Co. | Washington, D. C. | | | | 1 | 1½ | | | | | | | | | | |
| Woods Mobilette | Woods Mobilette Co. | Chicago, Ill. | ¼ | | | | | | | | | | | | | | |
| Zimmerman | Zimmerman Mfg. Co. | Auburn, Ind. | | ½ | | | | | | | | | | | | | |

## Steam Vehicles

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Stanley** | Stanley Motor Carriage Co. | Newton, Mass. | | | ¾ | 1½ | | | | | | | | | | | |
| Titan | Titan Motor Car Co. | Newark, Del. | | | | | | | | | | | | | | | |

## Electric Vehicles

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Argo | American Electric Car Co. | Saginaw, Mich. | | ½ | | 1 | | | | | | | | | | | |
| Andover | Andover Motor Vehicle Co. | Andover, Mass. | | | | | 1½ | | | | | | | | | | |
| Atlantic | Atlantic Vehicle Co. | Newark, N. J. | | ½ | | 1 | | 2 | | | 3½ | | 5 | | | | |
| **Baker** | Baker-R. & L. Co. | Cleveland, Ohio | | | | 1 | | 2 | | | 3½ | | 5 | | | | |
| Beaver | Beaver State Motor Co. | Gresham, Ore. | | | | | | | | | | | | | | | |
| Buffalo | Buffalo Electric Vehicle Co. | Buffalo, N. Y. | | | | 1 | | | | | | | | | | | |
| Capitol | Capitol Truck Mfg. Co. | Denver, Col. | | | | | | | | | | | | | | | |
| Carl | Carl Electric Vehicle Co. | Toledo, Ohio | | | | | | | | | | | | | | | |
| **Connorsville** | Connorsville Buggy Co. | Connorsville, Ind. | ⅜ | | | | | | | | | | | | | | |
| **Couple-Gear** | Couple-Gear Freight Wheel Co. | Grand Rapids, Mich. | | | | | | 2 | | | 3½ | | 5 | | 6 | | |
| **C. T** | Commercial Truck Co. | Philadelphia, Pa. | | ½ | | 1 | | 2 | | | | | 5 | | | | |
| Dayton | Dayton Electric Car Co. | Dayton, Ohio | | | | | | | | | | | | | | | |
| Field | Field Omnibus Co. | New York City | 18 to 68 passenger buses | | | | | | | | | | | | | | |
| Fritchle | Fritchle Automobile & Battery Co. | Denver, Col. | | ½ | | | | | | | | | | | | | |
| **G.M.C** | General Motors Truck Co. | Pontiac, Mich. | | ½ | | 1 | 1½ | 2 | | | 3½ | | | 5 | 6 | | |
| **G.V** | General Vehicle Co. | Long Island City, N. Y. | | ½ | | 1 | | 2 | | | 3½ | | | 5 | | | |
| **Lansden** | Lansden Co., Ltd. | Brooklyn, N. Y. | ⅜ | ½ | | 1 | | 2 | | | 3½ | | | 5 | | | T |
| Old Hickory | Kentucky Wagon Mfg. Co. | Louisville, Ky. | | | | 1 | | | | | | | | | | | |
| Storms | Storms Electric Co. | Detroit, Mich. | ¼ | | | | | | | | | | | | | | |
| Urban | Kentucky Wagon Mfg. Co. | Louisville, Ky. | | | ¾ | | 1½ | | 2½ | | | | 4 | | | | |
| Voltacar | Cyco-Lectric Car Co. | New York City | ¼ | | | | | | | | | | | | | | |
| **Walker** | Walker Vehicle Co. | Chicago, Ill. | | ½ | | 1 | | 2 | | 3 | | 4 | 5 | | | | T |
| **Ward** | Ward Motor Vehicle Co. | Mount Vernon, N. Y. | ⅜ | ½ | | 1 | | 2 | | | 3½ | | 5 | | | | |
| **Waverley** | Waverley Co. | Indianapolis, Ind. | | ½ | | 1 | | 2 | | | 3½ | | 5 | | | | |

Heavy type represents vehicles whose specifications are given in this issue.

# Buyers' Guide to 1916 Gasoline Trucks

## Commercial Vehicles Offered for New Season—Classified According to Rated Load Capacity with Salient Features of the Chassis Which Will Assist in Comparison

### TRUCKS UNDER ½-TON CAPACITY

| Name and Model | Capacity, Pounds | Chassis Price | Wheelbase | Tires | Motor Horsepower | Gearset Type | Final Drive |
|---|---|---|---|---|---|---|---|
| Brasie.....Packet | 500 | $450-c | 100 | pneu.... | 12.08 | fric..... | dbl chn.... |
| Kearns.....L | 500 | 375 | 90 | pneu.... | 12.08 | selec.... | bevel |
| Overland.....83 | 800 | 750-c | 106 | pneu.... | 27.20 | selec.... | bevel |
| R-S..... | 350 | 305 | 65 | pneu.... | 9.12 | prog.... | sing chn |
| Saxon..... | 400 | 395 | 96 | pneu.... | 12.08 | prog.... | bevel |
| Trumbull.....16D | 500 | 300 | 80* | pneu.... | 13.37 | selec.... | bevel |

### TRUCKS OF ½-TON CAPACITY

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Bauer.....A | 1,000 | 720 | 100 | solid*... | 22.50 | selec.... | doub-red |
| Brinton.....H | 1,200 | 815 | 98 | cush*... | 16.92 | selec.... | top worm |
| Croce.....16 | 1,000 | 800 | 104 | pneu.... | 16.92 | selec.... | bevel |
| Crowther.....10-30 | 1,000 | 600 | 110 | pneu.... | 22.50 | rollers... | rollers |
| Detroit.....B | 1,000 | ..... | 112 | pneu.... | 22.50 | selec.... | bevel |
| Dispatch.....L | 1,200 | 900 | 120 | pneu.... | 22.50 | fric..... | dbl chn |
| Duryea..... | 1,000 | 600 | 84 | solid..... | ..... | rollers... | rollers |
| Falcon..... .....A | 1,000 | 715 | 106 | pneu.... | 14.40 | selec.... | bevel |
| Hanger.....B | 1,000 | 875 | 110* | pneu.... | 16.92 | selec.... | top worm |
| Henderson.....C | 1,200 | 1,100 | 106* | pneu.... | 19.61 | selec.... | top worm |
| Hannibal.....A | 1,000 | 550 | 106 | pneu.... | 16.92 | selec.... | |
| I.H.C.....MA | 1,000 | 600-c | 90 | solid*... | 20.00 | ind-c.... | dbl chn |
| I.H.C.....MW | 1,000 | 710-c | 90 | solid*... | 16.20 | ind-c.... | dbl chn |
| Kearns.....D | 1,000 | 600 | 107 | pneu.... | 16.92 | selec.... | bevel |
| Kisselkar..... | 1,000 | 950 | 115 | pneu.... | 24.22 | selec.... | bevel |
| Kosmath.....15 | 1,000 | 675 | 100 | pneu.... | 15.65 | selec.... | bevel |
| Lambert.....VI | 1,000 | 900 | 106* | pneu.... | 19.61 | fric | dbl chn |
| Lippard-Stewart.....M | 1,000 | 1,000 | 106 | pneu.... | 14.40 | selec.... | top worm |
| Mercury.....P | 1,000 | 650 | 85 | solid.... | 14.50 | plan.... | dbl chn |
| Studebaker.....SF | 1,000 | 785 | 112 | pneu.... | 24.22 | selec.... | bevel |
| Vim.....18 | 1,000 | 620 | 100 | pneu.... | 14.40 | selec.... | bevel |
| Wilcox.....T | 1,000 | 1,000 | 115 | pneu.... | 19.61 | selec.... | bevel |

### TRUCKS OF ¾-TON CAPACITY

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Bauer.....B | 1,500 | 840 | 110 | solid*... | 22.50 | selec.... | doub-red |
| Bessemer.....G | 1,500 | 975 | 124 | solid.... | 19.61 | selec.... | int-gear |
| Bollstrom.....A | 1,500 | 1,200 | 125* | pneu*... | 15.64 | selec.... | int-g-4 |
| Buick.....D4 | 1,500 | 1,150 | 122 | pneu.... | 22.50 | selec.... | bevel |
| Commerce.....N | 1,500 | 875 | 120 | pneu.... | 19.61 | selec.... | bevel |
| Dart.....BB | 1,500 | 1,300 | 124 | solid.... | 19.61 | prog.... | top worm |
| Denby.....U | 1,500 | 890-c | 119 | solid.... | 15.64 | selec.... | int-gear |
| Diamond-T.....JA-JB | 1,500 | 1,175 | 126* | solid.... | 19.61 | selec.... | top worm |
| Dorris.....IA4 | 1,500 | 1,900 | 144* | pneu.... | 30.65 | selec.... | bevel |
| Gabriel.....H | 1,500 | 1,600 | 126 | pneu.... | 27.20 | selec.... | bevel |
| Garford.....64 | 1,500 | 1,350 | 120 | p&s..... | 19.61 | selec.... | dbl chn |
| G.M.C.....15 | 1,500 | 1,090 | 122 | pneu.... | 19.61 | selec.... | bevel |
| Geneva.....1 | 1,500 | ..... | 96 | solid.... | 22.10 | plan.... | dbl chn |
| I.H.C.....E | 1,500 | 950-c | 102 | solid*... | 16.20 | ind-c.... | dbl chn |
| Independent.....F | 1,500 | 1,285 | 128* | solid*... | 19.61 | selec.... | top worm |
| Krebs.....F | 1,500 | 1,600 | 120 | pneu.... | 22.50 | selec.... | top worm |
| Lippard-Stewart.....W | 1,500 | 1,600 | 125* | pneu*... | 22.50 | selec.... | top worm* |
| Little Giant.....15 | 1,500 | 1,500 | 120 | p&s..... | 19.61 | selec.... | top worm |
| Lincoln.....D | 1,500 | 900 | 122 | pneu.... | 22.50 | selec.... | bevel |

### TRUCKS OF ¾-TON CAPACITY (Cont'd)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Menominee.....E | 1,500 | 1,125 | 124 | solid.... | 22.50 | selec.... | sp-bev |
| Palmer-Moore.....K | 1,500 | 1,150 | 106 | solid*... | 19.61 | selec.... | int-gear |
| Paulding.....DI | 1,500 | 975 | 120* | solid.... | 16.92 | selec.... | int-gear |
| Reo.....F | 1,500 | 1,000 | 120 | pneu.... | 27.20 | selec.... | bevel |
| Republic.....F | 1,500 | 995-c | 124 | solid*... | 19.61 | selec.... | int-gear |
| Sanford.....O | 1,500 | 1,290 | 120 | pneu*... | 19.61 | selec.... | int-gear |
| South Bend.....30 | 1,500 | 1,475 | 128 | pneu.... | 22.50 | selec.... | top worm |
| Sterling..... | 1,500 | 895 | 127 | pneu.... | 15.64 | prog.... | top worm |
| Stewart (B).....3 | 1,500 | ..... | 118* | pneu.... | 19.61 | selec.... | int-gear |
| Tiffin.....A-AC | 1,500 | 1,400* | 112 | solid.... | 19.61 | selec.... | int-gear* |
| White.....GBBE | 1,500 | 2,100 | 133½ | pneu.... | 22.50 | selec.... | bevel |
| Wilcox.....N | 1,500 | 1,200 | 120 | pneu.... | 19.61 | selec .... | top worm |

### TRUCKS OF 1-TON CAPACITY

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Adams.....A | 2,000 | 1,850 | 136* | solid.... | 22.50 | selec.... | dbl chn |
| Atterbury.....6B | 2,000 | 1,775 | 140½ | solid.... | 22.50 | selec.... | top worm |
| Available..... | 2,000 | 1,500 | 132* | solid.... | 22.50 | selec.... | top worm |
| Avery.....C | 2,000 | 1,690 | 128 | solid.... | 27.20 | selec.... | dbl chn |
| Barker.....U | 2,000 | 2,000 | 130 | solid.... | 25.60 | selec.... | top worm |
| Brockway.....H | 2,500 | 1,600 | 124* | solid.... | 22.50 | selec.... | dbl chn |
| Brockway.....J | 2,500 | 1,825 | 124* | solid.... | 22.50 | selec.... | top worm |
| Chase.....A | 2,000 | 1,650 | 140 | solid.... | 19.61 | selec.... | top worm |
| Continental (C).....FL | 2,000 | 1,550 | 144* | solid.... | 22.50 | selec.... | top worm |
| Corbitt.....B | 2,000 | 2,250 | 130 | solid.... | 22.50 | selec.... | top worm |
| Dart.....B | 2,000 | 1,400 | 138* | solid.... | 19.61 | selec.... | dbl chn |
| Denby.....B | 2,000 | 1,475 | 120 | solid.... | 19.61 | selec.... | int-gear |
| Fargo.....K | 2,000 | 1,175 | 130 | solid.... | 22.50 | selec.... | int-gear |
| Gabriel.....O | 2,000 | 1,800 | 136 | pneu.... | 27.20 | selec.... | top worm |
| Garford.....75 | 2,000 | 1,450 | 120 | p&s..... | 19.61 | selec.... | top worm |
| G.M.C.....25 | 2,500 | 1,800 | 144* | solid.... | 22.50 | selec.... | dbl chn |
| G.M.C.....26 | 2,500 | 1,800 | 144* | solid.... | 22.50 | selec.... | top worm |
| Gramm-Bernstein..... | 2,000 | 1,500 | 118 | solid.... | 19.61 | ind-c.... | top worm |
| Henderson.....D | 2,000 | 1,500 | 124* | pneu*... | 22.50 | selec.... | top worm |
| I.H.C.....F | 2,000 | 1,500 | 128 | solid*... | 19.61 | selec.... | int-gear |
| Indiana.....S | 2,000 | ..... | 128 | solid*... | 19.61 | selec.... | top worm |
| Kelly-Springfield..K-30 | 2,000 | 2,000 | 120 | solid*... | 22.50 | selec.... | dbl chn |
| Kisselkar..... | 2,000 | 1,500 | 125 | pneu*... | 24.22 | selec.... | top worm |
| Koehler.....K | 2,000 | 870 | 129 | solid.... | 19.61 | selec.... | int-gear |
| Krebs.....G | 2,000 | 2,000 | 144 | solid.... | 22.50 | selec.... | top worm |
| Lambert.....V3 | 2,000 | 1,800 | 120 | solid.... | 32.40 | fric..... | dbl chn |
| Landshaft.....GI | 2,000 | 1,250 | 124* | solid.... | 19.61 | selec.... | int-gear |
| Lange.....C | 2,000 | 1,750 | 130* | solid.... | 22.50 | ind-c.... | dbl chn |
| Lippard-Stewart.....H | 2,000 | 2,000 | 145 | solid.... | 22.50 | selec.... | top worm |
| Maccar.....K | 2,000 | 2,100 | 150* | solid.... | 27.20 | selec.... | dbl chn |
| Maccar.....L | 2,000 | 2,100 | 150* | solid.... | 27.20 | selec.... | top worm |
| Mack.....AB | 2,000 | 2,000 | 144* | solid*... | 25.60 | selec.... | top worm |
| Martin.....R | 2,000 | 2,050 | 130 | solid.... | 25.60 | selec.... | dbl chn* |
| Menominee.....F | 2,500 | 1,575 | 130* | solid.... | 22.50 | selec.... | top worm |
| Modern.....T | 2,000 | ..... | 132* | solid.... | 19.61 | selec.... | top worm |
| Moreland..... | 2,000 | 1,550 | 126 | solid.... | 22.50 | selec.... | top worm |
| Nelson & LeMoon...E1 | 2,000 | 1,700 | opt..... | solid.... | 22.50 | selec.... | top worm |
| Packard.....1D | 2,000 | 2,200 | 126* | solid.... | 25.60 | prog.... | top worm |
| Palmer..... | 2,000 | 1,350 | 115½ | pneu*... | 22.50 | selec.... | int-gear |
| Palmer-Moore.....M | 2,000 | 1,350 | 126 | solid*... | 22.50 | selec.... | int-gear |
| Paulding.....G-GI | 2,000 | 1,300 | 120* | solid.... | 25.60 | selec .... | int-gear |
| Republic.....E | 2,000 | 1,275 | 144 | solid*... | 22.50 | selec.... | int-gear |
| Rowe.....CW | 2,000 | 2,450 | 130 | solid.... | 16.92 | selec.... | top worm |
| Sanford.....P | 2,000 | 1,350 | 138 | pneu*... | 19.61 | selec.... | int-gear |

**ABBREVIATIONS: General,** *, *with other options;* opt, *optional.* **Price,** -c, *complete with body.* **Tires, Kind,** pneu, *pneumatic;* cush, *cushion;* sol-st, *solid in front, steel in rear;* p&s, *pneumatic in front, solid in rear;* p&c, *pneumatic in front, cushion in rear;* c&s, *cushion in front, solid in rear.* **Gearset Type,** prog, *progressive sliding gear;* selec, *selective sliding gear;* plan, *planetary;* ind-c, *constant-mesh individual clutch;* fric, *friction;* elec, *electric.* **Final Drive,** bevel, *direct bevel;* doub-red, *double-reduction, bevel and spur;* int-gear, *internal-gear;* top worm, *worm gear with worm on top;* dbl chn, *double chain;* sing chn, *single chain;* -f, *to front wheels;* -4, *to all four wheels.*

## TRUCKS OF 1-TON CAPACITY (Cont'd)

| Name and Model | Capacity, Pounds | Chassis Price | Wheelbase | Tires | Motor Horsepower | Gearset Type | Final Drive |
|---|---|---|---|---|---|---|---|
| Selden....T | 2,000 | 1,700 | 126½* | solid | 19.61 | selec | top worm |
| Service....120 | 2,000 | 1,375 | 135 | solid | 19.61 | selec | top worm |
| Signal....F | 2,000 | 1,550 | 144* | solid | 22.50 | selec | top worm |
| Stewart (B)....4 | 2,500 | ..... | 128 | solid | 19.61 | selec | int-gear |
| Stewart (C)....A | 2,000 | 700 | 96 | solid | 20.00 | plan | dbl chn |
| Studebaker....7 | 2,000 | ..... | 125 | pneu | 24.22 | selec | bevel |
| Superior....A | 2,000 | 1,350 | 124 | solid* | 19.61 | selec | int-gear |
| Tiffin....AI | 2,000 | 1,600 | 112 | solid | 19.61 | selec | int-gear |
| Transit....E | 2,000 | 2,000 | 130 | solid | 32.40 | selec | dbl chn |
| Twin City.... | 2,000 | 1,350 | 104* | solid | 20.00 | plan | dbl chn |
| Wichita....A | 2,000 | 1,650 | 110* | solid | 16.92 | selec | dbl chn |
| Wichita....K | 2,000 | 1,650 | 118* | solid | 19.61 | selec | top worm |
| Wilcox....S | 2,000 | 1,600 | 128 | pneu | 22.50 | selec | top worm |
| Witt-Will....WD1 | 2,240 | ..... | 120 | solid | 22.50 | selec | top worm |

## TRUCKS OF 1½-TON CAPACITY

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Adams....D | 3,000 | 2,300 | 136* | solid | 27.20 | selec | dbl chn |
| Bessemer....A | 3,000 | 1,800 | 136 | solid | 27.20 | selec | dbl chn |
| Continental (C)....HL | 3,000 | 1,750 | 144 | solid | 22.50 | selec | top worm |
| Croce.... | 3,000 | 1,800 | 120* | solid | 25.60 | selec | top worm |
| DeKalb....D1 | 3,000 | 1,950 | 134* | solid | 27.20 | selec | top worm* |
| Denby....D | 3,000 | 1,685 | 144* | solid | 22.50 | selec | int-gear |
| Diamond-T....J2 | 3,000 | 2,050 | 160* | solid | 27.20 | selec | top worm |
| Federal....M | 3,000 | 1,800 | 144* | solid | 27.20 | selec | top worm |
| F.W.D.... ....G | 3,000 | 3,600 | 124 | solid | 32.40 | ind-c | bevel-4 |
| Gabriel....M | 3,000 | 2,200 | 144 | pneu | 27.20 | selec | top worm |
| Garford....66 | 3,000 | 1,800 | 142* | solid | 22.50 | selec | top worm |
| G.M.C....31 | 3,000 | 1,900 | 144* | solid | 22.50 | selec | top worm |
| Gramm-Bernstein.... | 3,000 | 1,800 | 130* | solid | 19.61 | ind-c | top worm |
| Horner....F-G | 3,000 | ..... | 145* | solid | 27.20 | selec | top worm* |
| Indiana....D | 3,000 | ..... | 135 | solid | 27.20 | selec | top wom |
| Kelly-Springfield..K-31 | 3,000 | 2,050 | 144* | solid | 22.50 | selec | dbl chn |
| Kleiber....1 | 3,000 | 2,250 | 140* | solid | 27.20 | selec | top worm |
| Larrabee.... | 3,000 | 1,950 | 132 | solid | 27.20 | selec | top worm |
| Lippard-Stewart....F | 3,000 | 2,300 | 145 | solid | 27.20 | selec | top worm |
| Little Giant....H | 3,000 | 1,450 | 110 | solid | 19.61 | selec | dbl chn |
| Mack....AB | 3,000 | 2,350 | 144* | solid* | 25.60 | selec | top worm |
| Mais....C&D | 3,000 | 2,600 | 132* | solid | 25.60 | prog | int-gear |
| Modern....N | 3,000 | ..... | 144* | solid | 22.50 | selec | top worm |
| Mogul....LM | 3,000 | 1,600 | 125* | solid | 22.50 | selec | top worm |
| Moon....B | 3,000 | 1,650 | 140* | solid | 22.50 | prog | bevel |
| Moreland.... | 3,000 | 1,850 | 126* | solid | 27.20 | selec | top worm |
| Netco....C | 3,000 | 2,250 | 144* | solid | 27.20 | selec | top worm |
| New York....L | 3,000 | 1,800 | 129* | solid | 22.50 | selec | top worm* |
| Old Reliable.... | 3,000 | 1,950 | 138* | solid | 22.50 | selec | top worm |
| Packard....1½D | 3,000 | 2,500 | 126* | solid | 25.60 | prog | top worm |
| Paulding....E-EI | 3,000 | 1,600 | 130* | solid | 25.60 | selec | int-gear* |
| Sandow.... | 3,000 | 1,800 | 150* | solid | 22.50 | selec | top worm |
| Service....QW | 3,000 | 2,200 | 150 | solid | 27.20 | selec | top worm |
| Signal....H | 3,000 | 1,750 | 144 | solid | 22.50 | selec | top worm |
| South Bend....40 | 3,000 | 1,750 | 130* | solid | 25.60 | selec | top worm* |
| Stegeman.... | 3,000 | 1,900 | 150 | solid | 27.20 | selec | top worm* |
| Sullivan....G | 3,000 | 1,600 | 129 | solid | 22.50 | selec | dbl chn |
| Tiffin....GI-GC | 3,000 | 1,800* | 128 | solid | 22.50 | selec | int-gear* |
| Universal....G | 3,000 | 1,950 | 130* | solid | 22.50 | selec | top worm |
| United....AG | 3,000 | ..... | 144 | solid* | 22.50 | selec | top worm |
| Velie....25 | 3,000 | 2,250 | 150 | solid | 27.20 | selec | top worm |
| White....TBC | 3,000 | 3,000 | 145½ | pneu | 22.50 | selec | doub-red |
| Wichita....L | 3,000 | 1,800 | 118* | solid | 19.61 | selec | top worm |
| Wilcox....R | 3,000 | 1,800 | 134 | solid | 29.00 | selec | top worm |

## TRUCKS OF 2-TON CAPACITY

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Acason.... | 4,000 | 2,100 | 150 | solid | 29.00 | selec | top worm |
| Acme.... | 4,000 | 2,000 | 148 | solid | 27.20 | selec | top worm |
| Armleder....HC | 4,000 | 2,500 | 148* | solid | 27.20 | selec | dbl chn |
| Armleder....HW | 4,000 | 2,800 | 148* | solid | 27.20 | selec | top worm |
| Atterbury....6C | 4,000 | 2,375 | 153½ | solid | 27.20 | selec | top worm |
| Autocar....21F | 4,000 | 1,650 | 97 | solid* | 18.10 | prog | doub-red |
| Available.... | 4,000 | 2,000 | 144* | solid | 27.20 | selec | top worm |
| Avery....B | 4,000 | 2,700 | 128 | solid | 36.15 | selec | dbl chn |
| Barker.... V | 4,000 | 2,400 | 136 | solid | 25.60 | selec | top worm |
| Bessemer....D | 4,000 | 2,000 | 136 | solid | 27.20 | selec | top worm |
| Blair....2C | 4,000 | 2,850 | 121* | solid | 22.50 | ind-c | top worm |
| Brockway....I | 4,000 | 1,900 | 140* | solid | 27.20 | selec | dbl chn |

## TRUCKS OF 2-TON CAPACITY (Cont'd)

| Name and Model | Capacity, Pounds | Chassis Price | Wheelbase | Tires | Motor Horsepower | Gearset Type | Final Drive |
|---|---|---|---|---|---|---|---|
| Brockway....K | 4,000 | 2,125 | 140* | solid | 27.20 | selec | top worm |
| Burford....O | 4,000 | 2,000 | 132* | solid | 22.50 | selec | int-gear |
| Chase....R | 4,000 | 2,200 | 160* | solid | 27.20 | selec | top worm |
| Coleman....J | 4,000 | 2,400 | 132 | solid | 25.60 | selec | top worm |
| Continental (C)....J | 4,000 | 2,100 | 146 | solid | 27.20 | selec | top worm |
| Corbitt....A | 4,000 | 2,500 | 145* | solid | 27.20 | selec | top worm |
| Dart....C | 4,000 | 1,900 | 144* | solid | 27.20 | selec | dbl chn |
| Dayton....U | 4,000 | 2,650 | 118½ | solid | 29.00 | selec | dbl chn |
| Denby....E | 4,000 | 1,985 | 144* | solid | 22.50 | selec | int-gear |
| Diamond-T....J3 | 4,000 | 2,200 | 160* | solid | ..... | selec | top worm |
| Dorris....IAW | 4,000 | 2,500 | 162* | solid | 30.65 | selec | top worm |
| Duplex....C | 4,000 | 2,800 | 130* | solid | 27.20 | selec | int-g-4 |
| Duplex....E | 4,000 | ..... | 130* | solid | 29.00 | selec | int-g-4 |
| Fargo....N | 4,000 | 1,575 | 156 | solid | 27.20 | prog | int-gear |
| Garford....70 | 4,000 | 2,300 | 142* | solid | 29.00 | selec | top worm |
| G. A. Schacht.... | 4,000 | 2,800 | 138* | solid | 29.00 | selec | top worm |
| G.M.C....40 | 4,000 | 2,375 | 158* | solid | 27.20 | selec | dbl chn |
| G.M.C....41 | 4,000 | 2,375 | 158* | solid | 27.20 | selec | top worm |
| Hoadley.... | 4,000 | 3,000 | 145 | solid | 27.20 | selec | dbl chn-4 |
| Horner....F-G | 4,000 | ..... | 145* | solid | 27.20 | selec | top worm* |
| Independent....G | 4,000 | 1,800 | 144 | solid | 27.20 | selec | top worm |
| Jeffery....4015 | 4,000 | 2,750 | 124 | solid | 22.50 | ind-c | int-g-4 |
| Kelly-Springfield..K-35 | 4,000 | 2,750 | 144* | solid | 22.50 | selec | dbl chn |
| Kisselkar.... | 4,000 | 2,100 | 144 | solid | 29.00 | selec | top worm |
| Knickerbocker....16 | 4,000 | 2,200 | 148* | solid | 27.20 | selec | top worm |
| Krebs....H | 4,000 | 2,450 | 144* | solid | 27.20 | selec | top worm |
| Lambert....V5 | 4,000 | 2,000 | 120 | solid | 32.40 | fric | dbl chn |
| Landshaft....J1 | 4,000 | 1,550 | 144* | solid | 27.20 | selec | int-gear |
| Lange....B | 4,000 | 2,350 | 136* | solid | 27.20 | ind-c | dbl chn |
| Lippard-Stewart....G | 4,000 | 2,600 | 158 | solid | 27.20 | selec | top worm |
| Little Giant....16 | 4,000 | 2,500 | 144 | solid | 27.20 | selec | top worm |
| Maccar....J | 4,000 | 2,600 | 162* | solid | 32.40 | selec | dbl chn |
| Maccar....H | 4,000 | 2,600 | 162* | solid | 32.40 | selec | top worm |
| Mack....AB | 4,000 | 2,700 | 144* | solid* | 25.60 | selec | top worm |
| Mais....E&F | 4,000 | 2,800 | 145* | solid | 25.60 | prog | int-gear |
| Martin....S | 4,000 | 2,150 | 121 | solid | 25.60 | selec | dbl chn* |
| Menominee....D | 4,000 | 2,240 | 144 | solid | 27.20 | selec | top worm |
| Modern....R | 4,000 | ..... | 150* | solid | 27.20 | selec | top worm |
| Mogul....LW | 4,000 | 2,000 | 138* | solid | 27.20 | selec | top worm |
| Nelson & LeMoon...E2 | 4,000 | 2,250 | opt | solid | 27.20 | selec | top worm |
| Netco....D | 4,000 | 2,350 | 144* | solid | 27.20 | selec | top worm |
| Old Reliable.... | 4,000 | 2,750 | 120* | solid | 29.00 | selec | dbl chn |
| Packard....2D | 4,000 | 2,800 | 144* | solid | 25.60 | prog | top worm |
| Palmer.... | 4,000 | 1,975 | 144 | solid | 27.20 | selec | top worm |
| Paulding....H-HI | 4,000 | 1,950 | 160* | solid | 29.00 | selec | int-gear* |
| Peerless....TC2 | 4,000 | ..... | 145 | solid | 32.40 | selec | top worm |
| Pierce-Arrow.... | 4,000 | 3,000 | 150* | solid | 25.60 | selec | top worm |
| Reo....J | 4,000 | 1,650 | 146 | solid | 27.20 | selec | dbl chn |
| Republic....A | 4,000 | 1,475 | 144 | solid | 27.20 | selec | int-gear |
| Rowe....CDW | 4,000 | 2,800 | 144 | solid | 25.60 | selec | top worm |
| Salvador.... | 4,000 | 2,000 | 124* | cush | 25.60 | selec | top worm |
| Sandow.... | 4,000 | 2,350 | 171* | solid | 27.20 | selec | dbl chn |
| Sandow.... | 4,000 | 2,000 | 171* | solid | 27.20 | selec | top worm |
| Sanford....M | 4,000 | 1,910 | 140* | solid | 25.60 | selec | int-gear* |
| Selden....JC | 4,000 | 2,000 | 150 | solid | 22.50 | selec | int-gear |
| Selden....JWL | 4,000 | 2,250 | 150* | solid | 27.20 | selec | top worm |
| Service....PW | 4,000 | 2,500 | 160* | solid | 27.20 | selec | top worm |
| Signal....J | 4,000 | 2,100 | 150 | solid | 27.20 | selec | top worm |
| South Bend....40-2 | 4,000 | 2,000 | 142 | solid | 25.60 | selec | top worm* |
| Standard....70 | 4,000 | 2,000 | 140 | solid | 27.20 | selec | top worm |
| Sterling.... | 4,000 | 2,800 | 148* | solid | 25.60 | selec | top worm |
| Sullivan....E | 4,000 | 2,250 | 150 | solid | 27.20 | selec | top worm |
| Superior....C | 4,000 | 1,800 | 144 | solid | 22.50 | selec | int-gear |
| Tiffin....MW-MC | 4,000 | 2,600* | 140 | solid | 27.20 | selec | top worm* |
| Tower.... | 4,000 | 1,600 | 135 | solid | 19.61 | selec | top worm |
| Transit....F | 4,000 | 2,850 | 144 | solid | 32.40 | selec | dbl chn |
| Twin City.... | 4,000 | 1,500 | 104* | solid | 19.61 | prog | dbl chn |
| Universal....D | 4,000 | 2,800 | 132* | solid | 25.60 | selec | dbl chn |
| United....BSW | 4,000 | 2,250 | 144* | solid | 27.20 | selec | top worm |
| U.S....H | 4,000 | 2,700 | 138 | solid | 27.20 | ind-c | top worm |
| Vulcan.... | 4,000 | 2,750 | 150* | solid | 30.00 | selec | dbl chn |
| Wichita....B | 4,000 | 2,100 | 118* | solid | 19.61 | selec | dbl chn |
| Wichita....M | 4,000 | 2,100 | 118* | solid | 19.61 | selec | top worm |
| Wilson....E | 4,000 | 2,000 | 144 | solid | 27.20 | selec | top worm |
| Witt-Will....WD2 | 4,480 | 2,250 | 144 | solid | 27.20 | selec | top worm |

## TRUCKS OF 2½-TON CAPACITY

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Adams....E | 5,000 | 2,500 | 140* | solid | 27.20 | selec | dbl chn |
| Armleder....EC | 5,000 | 2,800 | 148* | solid | 27.20 | selec | dbl chn |

**ABBREVIATIONS: General,** *, *with other options;* opt, *optional.* **Price,** -c, *complete with body.* **Tires, Kind,** pneu, *pneumatic;* cush, *cushion;* sol-st, *solid in front, steel in rear;* p&s, *pneumatic in front, solid in rear;* p&c, *pneumatic in front, cushion in rear;* c&s, *cushion in front, solid in rear.* **Gearset Type,** prog, *progressive sliding gear;* selec, *selective sliding gear;* plan, *planetary;* ind-c, *constant-mesh individual clutch;* fric, *friction;* elec, *electric.* **Final Drive,** bevel, *direct bevel;* doub-red, *double-reduction, bevel and spur;* int-gear, *internal-gear;* top worm, *worm gear with worm on top;* dbl chn, *double chain;* sing chn, *single chain;* -f, *to front wheels;* -4, *to all four wheels.*

## TRUCKS OF 2½-TON CAPACITY (Cont'd)

| Name and Model | Capacity, Pounds | Chassis Price | Wheelbase | Tires | Motor Horsepower | Gearset Type | Final Drive |
|---|---|---|---|---|---|---|---|
| Brinton....F | 5,000 | 2,250 | 138* | solid | 27.20 | selec | top worm |
| Croce | 5,000 | 2,600 | 130 | solid | 25.60 | selec | top worm |
| Dart....CC | 5,000 | 2,100 | 150 | solid | 27.20 | selec | top worm |
| DeKalb....D2 | 5,000 | 2,450 | 136* | solid | 27.20 | selec | top worm* |
| Gersix....C | 5,000 | 2,500 | 148* | solid | 33.75 | selec | top worm |
| Gramm-Bernstein | 5,000 | 2,600 | 156 | solid | 29.00 | ind-c | top worm |
| Kleiber....2 | 5,000 | 2,750 | 150* | solid | 27.20 | selec | top worm |
| Larrabee | 5,000 | 2,200 | 140* | solid | 27.20 | selec | top worm |
| Martin....E | 5,000 | 2,800 | 135 | solid | 29.00 | selec | dbl chn* |
| Mogul....L | 5,000 | 2,250 | 138* | solid | 27.20 | selec | dbl chn |
| Moore | 5,000 | 2,500 | 162½ | solid | 32.40 | selec | dbl chn |
| Moreland | 5,000 | 2,400 | 168* | solid | 32.40 | selec | top worm |
| Stegeman | 5,000 | 2,500 | 144* | solid | 27.20 | selec | top worm* |
| Stegeman....Special | 5,000 | 2,500 | 142* | solid | 27.20 | selec | top worm* |

## TRUCKS OF 3-TON CAPACITY

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| A&B | 6,000 | ..... | 144 | solid | 42.64 | selec | int-g-f |
| Avery....B | 6,000 | 3,200 | 128 | solid | 36.15 | selec | dbl chn |
| Avery....A | 6,000 | 2,500-c | 140 | wood | 36.15 | selec | dbl chn |
| Beech Creek....3A | 6,000 | ..... | 132 | solid | 40.00 | ..... | bevel-4 |
| Blair....2D | 6,000 | 3,250 | 121* | solid | 29.00 | ind-c | top worm |
| Coleman....H | 6,000 | 3,000 | 138 | solid | 36.15 | selec | dbl chn |
| Duplex....D | 6,000 | 3,300 | 130* | solid | 29.00 | selec | int-g-4 |
| F.W.D....B | 6,000 | 4,000 | 124 | solid | 36.15 | selec | bevel-4 |
| G. A. Schacht | 6,000 | 3,200 | 168* | solid | 29.00 | selec | top worm |
| Horner....F-G | 6,000 | ..... | 145* | solid | 32.40 | selec | top worm* |
| Kelly-Springfield..K-40 | 6,000 | 3,400 | 150* | solid | 32.40 | selec | dbl chn |
| Kisselkar | 6,000 | 2,750 | 144 | solid | 32.40 | selec | dbl chn |
| Krebs....I | 6,000 | 3,100 | 162* | solid | 27.20 | selec | top worm |
| Locomobile....B | 6,000 | 3,500 | 150 | solid | 29.00 | selec | top worm |
| Mais....K, L&H | 6,000 | 3,300 | 132* | solid | 29.75 | prog | int-gear |
| Morton | 6,000 | ..... | 112 | solid | 36.15 | selec | top worm-4 |
| Nelson & LeMoon...E3 | 6,000 | 2,950 | opt | solid | 32.40 | selec | top worm |
| Packard....3D | 6,000 | 3,400 | 156* | solid | 32.40 | prog | top worm |
| Peerless....TC3 | 6,000 | ..... | 151* | solid | 32.40 | selec | dbl chn |
| Republic....T | 6,000 | 2,400 | 165* | solid | 29.00 | selec | int-gear |
| Rowe....DFW | 6,000 | 3,400 | 156 | solid | 29.00 | selec | top worm |
| Sandow | 6,000 | 3,000 | 186* | solid | 32.40 | selec | dbl chn |
| Sandow | 6,000 | 2,500 | 186* | solid | 32.40 | selec | top worm |
| Universal....A | 6,000 | 3,400 | 132* | solid | 25.60 | selec | dbl chn |
| Voltz....C | 6,000 | 2,750 | 142 | solid | 32.40 | selec | dbl chn |
| Vulcan | 6,000 | 3,250 | 156* | solid | 30.00 | selec | dbl chn |
| White....TAD | 6,000 | 3,700 | 163 | solid | 22.50 | selec | dbl chn |

## TRUCKS OF 3½-TON CAPACITY

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Acason | 7,000 | 2,500 | 170 | solid | 29.00 | selec | top worm |
| Armleder....HW | 7,000 | 3,500 | 156* | solid | 32.40 | selec | top worm |
| Atterbury....6D | 7,000 | 3,175 | 167½ | solid | 32.40 | selec | top worm |
| Available | 7,000 | 3,000 | opt | solid | 32.40 | selec | top worm |
| Bessemer....E | 7,000 | 2,800 | 150 | solid | 32.40 | selec | top worm |
| Burford....D | 7,000 | ..... | 175* | solid | 32.40 | selec | top worm |
| C.T | 7,000 | 4,800 | 132 | solid | 36.15 | elec | int-g-4 |
| Continental (C)....M | 7,000 | 3,000 | 168* | solid | 32.40 | selec | top worm |
| Couple-Gear....HC | 7,000 | 4,800 | 144 | solid | 53.00 | elec | bevel-4 |
| Dayton....A | 7,000 | 3,400 | 136 | solid | 36.15 | selec | dbl chn |
| Diamond-T....L | 7,000 | 3,300 | 164* | solid | 32.40 | selec | top worm |
| Federal....L | 7,000 | 2,800 | 146 | solid | 32.40 | selec | top worm |
| G.M.C....70 | 7,000 | 3,175 | 163* | solid | 32.40 | selec | dbl chn |
| G.M.C....71 | 7,000 | 3,175 | 163* | solid | 32.40 | selec | top worm |
| Gramm-Bernstein | 7,000 | 3,400 | 168 | solid | 29.00 | ind-c | top worm |
| Hall | 7,000 | 2,800 | 144* | solid | 32.40 | prog | dbl chn |
| Hall | 7,000 | 2,800 | 144* | solid | 32.40 | prog | top worm |
| Harvey....WH | 7,000 | 2,700 | 168* | solid | 29.00 | selec | top worm |

## TRUCKS OF 3½-TON CAPACITY (Cont'd)

| Name and Model | Capacity, Pounds | Chassis Price | Wheelbase | Tires | Motor Horsepower | Gearset Type | Final Drive |
|---|---|---|---|---|---|---|---|
| King | 7,000 | 2,600 | 120 | solid | 32.40 | ind-c | dbl chn |
| Kleiber....3 | 7,000 | 3,300 | 160* | solid | 32.40 | selec | top worm |
| Knickerbocker....16 | 7,000 | 2,850 | 164* | solid | 32.40 | selec | top worm |
| Maccar....O | 7,000 | 3,250 | 174* | solid | 32.40 | selec | dbl chn |
| Maccar....M | 7,000 | 3,250 | 174* | solid | 32.40 | selec | top worm |
| Mack....AC | 7,000 | 3,400 | 168* | solid | 40.00 | selec | dbl chn |
| Modern....B | 7,000 | ..... | 176* | solid | 36.15 | selec | top worm |
| Mogul....T | 7,000 | 2,550 | 165* | solid | 32.40 | selec | dbl chn |
| Royal....A | 7,000 | 3,500 | 148 | solid | 29.00 | ind-c | top worm |
| Selden....N | 7,000 | 2,950 | 164 | solid | 32.40 | selec | top worm |
| Service....HW | 7,000 | 3,000 | 171* | solid | 32.40 | selec | top worm |
| Signal....M | 7,000 | 3,000 | 168* | solid | 32.40 | selec | top worm |
| South Bend....60 | 7,000 | 3,250 | 160* | solid | 36.15 | selec | top worm |
| Standard....60 | 7,000 | 2,850 | 144* | solid | 32.40 | selec | top worm |
| Stegeman | 7,000 | ..... | 156 | solid | 33.75 | selec | top worm* |
| Sterling | 7,000 | 3,400 | 158* | solid | 29.00 | selec | top worm |
| Transit....T | 7,000 | 3,500 | 144* | solid | 32.40 | selec | dbl chn |
| United....CSW | 7,000 | 2,900 | 144* | solid | 32.40 | selec | top worm |
| U.S....J | 7,000 | 3,400 | 162 | solid | 32.40 | ind-c | top worm |
| Velie....26 | 7,000 | 3,350 | 172 | solid | 32.40 | selec | top worm |
| Wichita....O | 7,000 | 3,250 | 165 | solid | 29.00 | selec | top worm |

## TRUCKS OF 4-TON CAPACITY

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Blair....2E | 8,000 | 3,750 | 135* | solid | 32.40 | ind-c | top worm |
| Kelly-Springfield..K-45 | 8,000 | 3,600 | 150* | solid | 32.40 | selec | dbl chn |
| Kisselkar | 8,000 | 3,350 | 162 | solid | 38.25 | selec | dbl chn |
| Locomobile....BB | 8,000 | 3,650 | 150 | solid | 29.00 | selec | top worm |
| Mais....M | 8,000 | 3,750 | 145* | solid | 29.75 | prog | int-gear |
| Martin....L | 8,000 | 3,300 | 145 | solid | 36.15 | selec | dbl chn* |
| Moreland | 8,000 | 3,200 | 186* | solid | 36.15 | selec | top worm |
| Old Reliable | 8,000 | 3,750 | 126 | solid | 36.15 | selec | dbl chn |
| Packard....4D | 8,000 | 3,800 | 156* | solid | 32.40 | prog | top worm |
| Peerless....TC4 | 8,000 | ..... | 151* | solid | 32.40 | selec | dbl chn |
| Standard....40 | 8,000 | 3,025 | 144* | solid | 32.40 | selec | dbl chn |

## TRUCKS OF 5-TON CAPACITY

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| A&B | 10,000 | ..... | 144 | solid | 42.64 | selec | int-g-f |
| Avery....B | 10,000 | 4,500 | 128 | solid | 44.20 | selec | dbl chn |
| Blair....2F | 10,000 | 4,500 | 135* | solid | 32.40 | ind-c | top worm |
| C.T | 10,000 | 5,200 | 156 | solid | 41.61 | elec | int-g-4 |
| Couple-Gear....AC | 10,000 | 5,200 | 144 | solid | 53.00 | elec | bevel-4 |
| Dayton....B | 10,000 | 4,500 | 148 | solid | 44.20 | selec | dbl chn |
| F.W.D....M | 10,000 | 4,800 | 148 | solid | 44.20 | selec | bevel-4 |
| Garford....D | 10,000 | 4,300 | 128* | solid | 36.15 | selec | dbl chn |
| G.M.C....100 | 10,000 | ..... | 163* | solid | 32.40 | selec | dbl chn |
| G.M.C....101 | 10,000 | ..... | 163* | solid | 32.40 | selec | top worm |
| Hall | 10,000 | 3,400 | 144* | solid | 32.40 | prog | dbl chn |
| Harvey....WK | 10,000 | 3,400 | 168* | solid | 32.40 | selec | top worm |
| Horner....F | 10,000 | ..... | 156* | solid | 44.20 | selec | dbl chn |
| Kelly-Springfield..K-50 | 10,000 | 4,250 | 150* | solid | 32.40 | selec | dbl chn |
| Kleiber....5 | 10,000 | 4,250 | 170* | solid | 44.20 | selec | top worm |
| Moore | 10,000 | 4,500 | 175 | solid | 44.20 | selec | dbl chn |
| Old Reliable | 10,000 | 4,250 | 126* | solid | 36.15 | selec | dbl chn |
| Peerless....TC5 | 10,000 | ..... | 151* | solid | 32.40 | selec | dlb chn |
| Pierce-Arrow | 10,000 | 4,500 | 168* | solid | 38.25 | selec | top worm |
| Rowe....TW | 10,000 | 4,500 | 156 | solid | 36.15 | selec | top worm |
| Royal....A | 10,000 | 4,500 | 138* | solid | 36.15 | ind-c | top worm* |
| Saurer | 10,000 | 4,800 | 153½ | solid | 30.65 | selec | dbl chn |
| Service....HX | 10,000 | 4,000 | 171* | solid | 36.15 | selec | dbl chn |
| Standard....50 | 10,000 | 3,400 | 144* | solid | 29.00 | selec | top worm |
| Stearns | 10,000 | 3,800 | 144* | solid | 29.00 | selec | dbl chn |
| Sterling | 10,000 | 4,500 | 178 | solid | 32.40 | selec | dbl chn |
| Sterling | 10,000 | 4,500 | 178 | solid | 32.40 | selec | top worm |
| Tiffin....RW-R | 10,000 | 4,250* | 168 | solid | 33.75 | selec | top worm* |
| Transit....V | 10,000 | 4,500 | 144* | solid | 32.40 | ind-c | dbl chn |

**ABBREVIATIONS: General,** *, *with other options;* opt, *optional.* **Price,** -c, *complete with body.* **Tires, Kind,** pneu, *pneumatic;* cush, *cushion;* sol-st, *solid in front, steel in rear;* p&s, *pneumatic in front, solid in rear;* p&c, *pneumatic in front, cushion in rear;* c&s, *cushion in front, solid in rear.* **Gearset Type,** prog, *progressive sliding gear;* selec, *selective sliding gear;* plan, *planetary;* ind-c, *constant-mesh individual clutch;* fric, *friction;* elec, *electric.* **Final Drive,** bevel, *direct bevel;* doub-red, *double-reduction, bevel and spur;* int-gear, *internal-gear;* top worm, *worm gear with worm on top;* dbl chn, *double chain;* sing chn, *single chain;* -f, *to front wheels;* -4, *to all four wheels.*

## TRUCKS OF 5-TON CAPACITY (Cont'd)

| Name and Model | Capacity, Pounds | Chassis Price | Wheelbase | Tires | Motor Horsepower | Gearset Type | Final Drive |
|---|---|---|---|---|---|---|---|
| United.....ESW | 10,000 | 3,500 | 144* | solid.... | 41.61 | selec.... | top worm |
| U.S.....K | 10,000 | 4,200 | 168 | solid.... | 32.40 | ind-c.... | top worm |
| Voltz.....T | 10,000 | 3,600 | 142 | solid.... | 40.00 | selec.... | dbl chn |
| Vulcan..... | 10,000 | 4,500 | 165* | solid.... | 30.00 | selec.... | dbl chn |
| Walter..... | 10,000 | 4,750 | 144* | solid*... | 30.65 | selec.... | spur-g-4 |
| Watson..... | 10,000 | ..... | 158 | s&st.... | 30.65 | selec.... | spur-g-f |
| White.....TCD | 10,000 | 4,500 | 169 | solid.... | 29.00 | selec.... | dbl chn |

## TRUCKS OF 5½-TON CAPACITY

| Name and Model | Capacity, Pounds | Chassis Price | Wheelbase | Tires | Motor Horsepower | Gearset Type | Final Drive |
|---|---|---|---|---|---|---|---|
| Mack.....AC | 11,000 | 4,000 | 168* | solid.... | 40.00 | selec.... | dbl chn |

## TRUCKS OF 6-TON CAPACITY

| Name and Model | Capacity, Pounds | Chassis Price | Wheelbase | Tires | Motor Horsepower | Gearset Type | Final Drive |
|---|---|---|---|---|---|---|---|
| Doane..... | 12,000 | 4,500-c | 178 | solid.... | 36.15 | selec.... | dbl chn |
| Garford.....F | 12,000 | 4,500 | 128* | solid.... | 41.61 | selec.... | dbl chn |
| Gramm-Bernstein..... | 12,000 | 4,300 | 168* | solid.... | 32.40 | ind-c.... | top worm |
| G. V. Mercedes.....FV | 12,000 | ..... | 169 | solid.... | 29.00 | selec.... | int-gear |
| Kelly-Springfield..K-60 | 12,000 | 4,500 | 150* | solid.... | 32.40 | selec.... | dbl chn |
| Kisselkar..... | 12,000 | 4,350 | 168 | solid.... | 38.25 | selec.... | dbl chn |
| Old Reliable..... | 12,000 | 4,500 | 126* | solid.... | 36.15 | selec.... | dbl chn |
| Peerless.....TC6 | 12,000 | ..... | 151* | solid.... | 32.40 | selec.... | dbl chn |
| Royal.....A | 12,000 | 4,800 | 140 | solid.... | 41.61 | ind-c.... | dbl chn |
| Tiffin.....SW-S | 12,000 | 4,550* | 168 | solid.... | 33.75 | selec.... | top worm* |
| Walter..... | 12,000 | 5,000 | 144* | solid.... | 30.65 | selec.... | spur-g-4 |

## TRUCKS OF 6½-TON CAPACITY

| Name and Model | Capacity, Pounds | Chassis Price | Wheelbase | Tires | Motor Horsepower | Gearset Type | Final Drive |
|---|---|---|---|---|---|---|---|
| Saurer..... | 13,000 | 5,800 | 156½ | solid.... | 30.65 | selec.... | dbl chn |

## TRUCKS OF 7-TON CAPACITY AND OVER

| Name and Model | Capacity, Pounds | Chassis Price | Wheelbase | Tires | Motor Horsepower | Gearset Type | Final Drive |
|---|---|---|---|---|---|---|---|
| Dayton.....E | 15,000 | 4,250 | 148 | solid.... | 44.20 | selec.... | dbl chn |
| Mack.....AC | 15,000 | 4,500 | 180 | solid.... | 40.00 | selec.... | dbl chn |
| Sterling..... | 14,000 | 4,750 | 178 | solid.... | 36.15 | selec.... | dbl chn |
| Walter..... | 15,000 | 5,250 | 144* | solid.... | 30.65 | selec.... | spur-g-4 |

## TRACTORS

| Name and Model | Capacity, Pounds | Chassis Price | Wheelbase | Tires | Motor Horsepower | Gearset Type | Final Drive |
|---|---|---|---|---|---|---|---|
| C.T..... | ..... | 5,000 | ..... | solid.... | 41.61 | elec..... | int-g-4 |
| Dominion..... | 12,000 | 3,200 | 90 | solid.... | 36.15 | selec.... | top worm |
| Knox.....3S | ..... | 4,500 | 108 | solid.... | 40.00 | selec.... | dbl chn |
| Lombard..... | 10,000 | ..... | ..... | steel.... | ..... | ..... | top worm |
| Mack.....AC | 30,000 | 4,000 | 116½ | solid.... | 40.00 | selec.... | dbl chn |
| Mercury-Bulley.....A | ..... | 3,400 | 71 | solid.... | 32.40 | ind-c.... | dbl chn |
| Mercury-Bulley..... | ..... | 3,400 | 71 | solid.... | 32.40 | ind-c.... | dbl chn |
| Phoenix Centiped..... | ..... | ..... | ..... | steel.... | 48.48 | ind-c.... | int-gear |
| Standard.....B | 12,000 | 3,250 | 72 | solid.... | 36.15 | ind-c.... | dbl chn |
| Standard.....D | 20,000 | 4,000 | 76 | solid.... | 36.15 | ind-c.... | dbl chn |
| Transport.....T | 10,000 | 2,500 | 80 | solid.... | 19.61 | selec.... | top worm |
| Walter..... | 24,000 | 5,000 | 108* | solid.... | 30.65 | selec.... | spur-g-4 |

**ABBREVIATIONS: General,** *, *with other options;* opt, *optional.* **Price,** -c, *complete with body.* **Tires, Kind,** pneu, *pneumatic;* cush, *cushion;* sol-st, *solid in front, steel in rear;* p&s, *pneumatic in front, solid in rear;* p&c, *pneumatic in front, cushion in rear;* c&s, *cushion in front, solid in rear.* **Gearset Type,** prog, *progressive sliding gear;* selec, *selective sliding gear;* plan, *planetary;* ind-c, *constant-mesh individual clutch;* fric, *friction;* elec, *electric.* **Final Drive,** bevel, *direct bevel;* doub-red, *double-reduction, bevel and spur;* int-gear, *internal-gear;* top worm, *worm gear with worm on top;* dbl chn, *double chain;* sing chn, *single chain;* -f, *to front wheels;* -4, *to all four wheels.*

# Save These Pages

FOLLOWING its custom Motor Age publishes the specifications of the principal makes of gasoline and electric commercial vehicles. Each year which has witnessed this collation of technical data has seen it more and more complete. For 1916 this tabulation covers twenty-two pages. These specifications are prepared for the information of prospective buyers of motor trucks, who require some means of ascertaining what vehicles are available, their capacities, types, their designs and their prices.

**Will Aid Many Classes**

These compilations are for the owner of motor trucks, whether at present in the market for new or additional equipment, or, if not, to aid him in keeping abreast of developments, so that when the time comes for further investment in commercial motor vehicles, he will be informed—will buy intelligently.

These specifications are also for the dealer in motor trucks of all types. They offer the means of informing him with regard to their comparative merits. This reference, being complete, enables the dealer to determine the capacities, prices and construction of competing makes, so that in case he wishes to change his line or add vehicles of another make or type to his stock, he may be sure that he has not overlooked any of the recognized makes. It enables him to obtain an accurate focus on the relation of his line to motor trucks in general.

Likewise, these specifications are valuable for the manufacturer, for the engineer, for the sales executives and others of the producing organization, who often are in urgent need for a reliable and complete reference to standard products in their line. Besides this, the industry requires some standard reference for a vast amount of data, the need for all of which cannot always be told in advance.

Therefore, it has been with the thought in mind of the needs and requirements of its readers, among which are all the persons mentioned in preceding paragraphs, that Motor Age has prepared and now offers the directory of 248 makers of vehicles, with the names and addresses of of these makers, as well as the capacities of their product; a condensed buyers' guide of the principal makes, grouped according to the tons capacity and segregated according to the forms of power; a table of specifications covering 408 different gasoline chassis models of 150 manufacturers, specifications and buyers' guide of fifty-three electric vehicles of the commercial types, together with a complete glossary of terms for both gasoline and electric specification tables and other data such as will be required by those in any was interested in commercial vehicles for 1916.

**Many Changes Made**

Much progress has been made in the commercial field during the last year as well as the passenger car field, and it is a physical impossibility to keep all of the data required in the course of the business routine at one's fingers' ends, so the information on the preceding and following pages should be preserved for reference during the 1916 season. The publication from year to year has proven the worth of such information as those who have come to use it in the past will testify.

# Specifications of 1916 Commercial Vehicles,

## Capacity, Motor Speed, Final Drive, Horsepower, Chassis Length, Bore Manufacturer Told in Detail—Glossary of

| Name and Model | Capacity in Pounds | Price of Chassis | Wheelbase in Inches | TIRES | | | MOTOR | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Kind | SIZES IN INCHES | | Location | No. of Cylinders | No. of Crankshaft Bearings | Bore and Stroke | N.A.C.C. Hp. | Cylinders Cast | Valves Placed | COOLING | | IGNITION | | |
| | | | | | Front | Rear | | | | | | | | Water Circulation | Radiator Core and Case | Type | Make | Spark Advance |
| A & B | 6,000 | ..... | 144 | solid | 48x3½d | 48x3½d | under hood | 4 | 3 | 5½x4½ | 42.64 | pairs | right | gear | fin-sheet | dual | Bosch | hand |
| A & B | 10,000 | ..... | 144 | solid | 48x3½d | 48x5d | under hood | 4 | 3 | 5½x4½ | 42.64 | pairs | right | gear | fin-sheet | dual | Bosch | hand |
| Acme | 4,000 | 2,000 | 148 | solid | 36x4 | 36x6 | under hood | 4 | 3 | 4½x5½ | 27.20 | block | left | cent | fin-sheet | sing | Eisemann | fixed |
| Adams A | 2,000 | 1,850 | 136* | solid | 36x3½ | 36x4 | under hood | 4 | 3 | 3¾x5½ | 22.50 | block | right | cent | fin-sheet | sing | Eisemann | auto |
| Adams D | 3,000 | 2,300 | 136* | solid | 36x3½ | 36x3½d | under hood | 4 | 3 | 4¼x5½ | 27.20 | block | right | cent | fin-sheet | sing | Eisemann | auto |
| Adams E | 5,000 | 2,500 | 140* | solid | 36x4 | 36x4d | under hood | 4 | 3 | 4½x5½ | 27.20 | block | right | cent | fin-sheet | sing | Eisemann | auto |
| Armleder HC | 4,000 | 2,500 | 148* | solid | 36x4 | 36x7 | under hood | 4 | 3 | 4½x5½ | 27.20 | block | left | cent | cell-sheet | sing | Bosch | hand |
| Armleder HW | 4,000 | 2,800 | 148* | solid | 36x4 | 36x7 | under hood | 4 | 3 | 4¼x5½ | 27.20 | block | left | cent | cell-sheet | sing | Bosch | hand |
| Armleder EC | 5,000 | 2,800 | 148* | solid | 36x4 | 36x4d | under hood | 4 | 3 | 4¼x5½ | 27.20 | block | left | cent | cell-sheet | sing | Bosch | hand |
| Armleder HW | 7,000 | 3,500 | 156* | solid | 36x5 | 36x5d | under hood | 4 | 3 | 4½x5½ | 32.40 | pairs | left | cent | fin-cast | sing | Bosch | hand |
| Atterbury 6B | 2,000 | 1,775 | 140½ | solid | 36x3½ | 36x5 | under hood | 4 | 3 | 3¾x5½ | 22.50 | block | left | cent | fin-cast | sing | Bosch | fixed |
| Atterbury 6C | 4,000 | 2,375 | 153½ | solid | 36x4 | 36x4d | under hood | 4 | 3 | 4¼x5½ | 27.20 | block | left | cent | fin-cast | sing | Bosch | fixed |
| Atterbury 6D | 7,000 | 3,175 | 167½ | solid | 36x5 | 40x5d | under hood | 4 | 3 | 4½x5½ | 32.40 | pairs | left | cent | fin-cast | doub | Bosch | hand |
| Autocar 21F | 4,000 | 1,650 | 97 | solid* | 34x4* | 34x5* | under seats | 2 | 2 | 4¾x4½ | 18.10 | sing | right | cent | fin-sheet | sing | Bosch | fixed |
| Available | 2,000 | 1,500 | 132* | solid | 36x3 | 36x4 | under hood | 4 | 3 | 3¾x5 | 22.50 | block | right | thermo | cell-sheet | sing | Bosch | fixed |
| Available | 4,000 | 2,000 | 144* | solid | 36x4 | 36x7* | under hood | 4 | 3 | 4¼x5½ | 27.20 | block | left | cent | cell-sheet | sing | Bosch | fixed |
| Available | 7,000 | 3,000 | opt | solid | 36x5 | 40x5d | under hood | 4 | 3 | 4½x5½ | 32.40 | pairs | left | cent | cell-sheet | dual | Bosch | fixed |
| Avery C | 2,000 | 1,690 | 128 | solid | 34x3½ | 34x5 | under hood | 4 | ..... | 4¼x5½ | 27.20 | block | left | cent | fin-sheet | dual | Heinze | hand |
| Avery B | 4,000 | 2,700 | 128 | solid | 36x4 | 36x3½d | under hood | 4 | ..... | 4½x5 | 36.15 | sing | left | cent | fin-sheet | dual | Eisemann | auto |
| Avery B | 6,000 | 3,200 | 128 | solid | 38x5 | 38x4d | under hood | 4 | ..... | 4½x5 | 36.15 | sing | left | cent | cell-sheet | dual | Eisemann | auto |
| Avery A | 6,000 | 2,500-c | 140 | wood | 38x5 | 38x4d | btw seats | 4 | ..... | 4½x5 | 36.15 | sing | left | cent | fin-sheet | dual | Eisemann | auto |
| Avery B | 10,000 | 4,500 | 128 | solid | 38x6 | 38x5d | under flr | 4 | ..... | 5¼x5¾ | 44.20 | pairs | opp | cent | cell-sheet | dual | Eisemann | auto |
| Barker U | 2,000 | 2,000 | 130 | solid | 42x3½ | 42x5 | under hood | 4 | ..... | 4 x5 | 25.60 | block | left | thermo | cell-sheet | sing | Eisemann | auto |
| Barker V | 4,000 | 2,400 | 136 | solid | 36x4 | 36x7 | under hood | 4 | ..... | 4 x5 | 25.60 | block | left | thermo | cell-sheet | sing | Eisemann | auto |
| Bauer A | 1,000 | 720 | 100 | solid* | 36x2½* | 36x2½* | under hood | 4 | 2 | 3¾x5 | 22.50 | block | right | cent | fin-sheet | dual | opt | hand |
| Bauer B | 1,500 | 840 | 110 | solid* | 36x2½* | 36x2½* | under hood | 4 | 2 | 3¾x5 | 22.50 | block | right | cent | fin-sheet | dual | opt | hand |
| Bessemer G | 1,500 | 975 | 124 | solid | 35x3 | 35x3½ | under hood | 4 | 3 | 3¾x5 | 19.61 | block | right | thermo | fin-sheet | sing | Bosch | hand |
| Bessemer A | 3,000 | 1,800 | 136 | solid | 37x3½ | 37x5 | under hood | 4 | 3 | 4¼x5½ | 27.20 | block | right | cent | fin-cast | sing | Bosch | hand |
| Bessemer D | 4,000 | 2,000 | 136 | solid | 37x4 | 37x3½d | under hood | 4 | 3 | 4¼x5½ | 27.20 | block | right | cent | fin-cast | sing | Bosch | hand |
| Bessemer E | 7,000 | 2,800 | 150 | solid | 37x5 | 37x4d | under hood | 4 | 3 | 4½x5½ | 32.40 | pairs | right | cent | fin-cast | sing | Bosch | hand |
| Blair 2C | 4,000 | 2,850 | 121* | solid | 34x4 | 34x3½d | btw seats | 4 | 3 | 3¾x5¾ | 22.50 | pairs | left | cent | cell-sheet | sing | Bosch | fixed |
| Blair 2D | 6,000 | 3,250 | 121* | solid | 36x4 | 36x4d | btw seats | 4 | 3 | 4¼x5¾ | 29.00 | pairs | left | cent | cell-sheet | dual | Bosch | fixed |
| Blair 2E | 8,000 | 3,750 | 135* | solid | 36x5 | 36x5d | btw seats | 4 | 3 | 4¾x6¾ | 32.40 | pairs | left | cent | cell-sheet | dual | Bosch | fixed |
| Blair 2F | 10,000 | 4,500 | 135* | solid | 36x6 | 36x6d | btw seats | 4 | 3 | 4½x6¾ | 32.40 | pairs | right | cent | cell-sheet | dual | Bosch | fixed |
| Bollstrom A | 1,500 | 1,200 | 125* | pneu* | 35x4½ | 35x4½ | under hood | 4 | 3 | 3⅞x5¼ | 15.64 | pairs | head | cent | cell-sheet | ..... | ..... | hand |
| Brasie Packet | 500 | 450-c | 100 | pneu | 28x3 | 28x3 | under hood | 4 | 2 | 2¾x4 | 12.08 | block | right | thermo | fin-sheet | sing | Atw. Kent | auto |
| Brinton H | 1,200 | 815 | 98 | cush* | 33x4 | 33x4 | under hood | 4 | 2 | 3¼x5 | 16.92 | block | left | thermo | fin-sheet | sing | Berling* | hand |
| Brinton F | 5,000 | 2,250 | 138* | solid | 36x4 | 36x5 | under hood | 4 | 3 | 4¼x5½ | 27.20 | block | left | cent | fin-sheet | sing | Bosch | fixed |
| Brockway H | 2,500 | 1,600 | 124* | solid | 36x3½ | 36x4 | under hood | 4 | 3 | 3¾x5½ | 22.50 | block | left | cent | fin-cast | sing | Bosch | fixed |
| Brockway J | 2,500 | 1,825 | 124* | solid | 36x3½ | 36x5 | under hood | 4 | 3 | 3¾x5½ | 22.50 | block | left | cent | fin-cast | sing | Bosch | fixed |
| Brockway I | 4,000 | 1,900 | 140* | solid | 36x4 | 36x6* | under hood | 4 | 3 | 4¼x5½ | 27.20 | block | left | cent | fin-cast | sing | Bosch | fixed |
| Brockway K | 4,000 | 2,125 | 140* | solid | 36x4 | 36x6* | under hood | 4 | 3 | 4¼x5½ | 27.20 | block | left | cent | fin-cast | sing | Bosch | fixed |
| Buick D4 | 1,500 | 1,150 | 122 | pneu | 35x5 | 35x5 | under hood | 4 | 3 | 3¾x5 | 22.50 | pairs | head | cent | cell-sheet | sing | Delco | auto-h |
| Burford O | 4 000 | 2,000 | 132* | solid | 36x3½ | 36x3½d | under hood | 4 | 3 | 3¾x5½ | 22.50 | block | right | cent | fin-cast | sing | Eisemann | fixed |
| Burford D | 7,000 | ..... | 175* | solid | 38x5 | 38x5d | under hood | 4 | 3 | 4¼x6¾ | 32.40 | block | left | cent | fin-cast | sing | Eisemann | fixed |
| Chase A | 2,000 | 1,650 | 140 | solid | 36x3½ | 36x5 | under hood | 4 | 3 | 3¾x5½ | 19.61 | block | l & h | thermo | fin-sheet | sing | Bosch | fixed |
| Chase R | 4,000 | 2,200 | 160* | solid | 36x3½ | 36x3½d | under hood | 4 | 3 | 4¼x5½ | 27.20 | block | left | cent | fin-sheet | sing | Bosch | fixed |
| Chase O | 7,000 | 3,300 | 175* | solid | 36x5 | 36x5d | under hood | 4 | 3 | 4½x5½ | 32.40 | pairs | left | cent | fin-cast | sing | Bosch | fixed |
| Coleman J | 4,000 | 2,400 | 132 | solid | 36x4 | 36x3½d | under seats | 4 | 3 | 4 x5 | 25.60 | block | left | cent | fin-sheet | sing | Bosch | hand |
| Coleman H | 6,000 | 3,000 | 138 | solid | 36x5 | 36x5d | under seats | 4 | 3 | 4¾x5½ | 36.15 | pairs | opp | cent | fin-sheet | sing | Bosch | hand |
| Commerce N | 1,500 | 875 | 120 | pneu | 34x4 | 34x4 | under hood | 4 | 3 | 3¾x5 | 19.61 | block | left | thermo | fin-cast | sing | Eisemann | fixed |
| C.T. | 7,000 | 4,800 | 132 | solid | 36x4d | 36x4d | under seats | 4 | 3 | 4¾x5½ | 36.15 | pairs | opp | cent | fin-cast | sing | Bosch* | 2-pt |
| C.T. | 10,000 | 5,200 | 156 | solid | 36x5d | 36x5d | under seats | 4 | 3 | 5 1/10x5½ | 41.61 | pairs | opp | cent | fin-cast | sing | Bosch* | 2-pt |
| C.T. Tractor | ..... | 5,000 | ..... | solid | 36x4d | 36x4d | under seats | 4 | 3 | 5 1/10x5½ | 41.61 | pairs | opp | cent | fin-cast | sing | Bosch* | 2-pt |
| Continental (C) FL | 2,000 | 1,550 | 144 | solid | 34x3 | 36x4 | under hood | 4 | 3 | 3¾x5½ | 22.50 | pairs | left | cent | fin-cast | sing | Bosch* | fixed |
| Continental (C) HL | 3,000 | 1,750 | 144 | solid | 34x3½ | 36x5 | under hood | 4 | 3 | 3¾x5½ | 22.50 | pairs | left | cent | fin-cast | sing | Bosch* | fixed |
| Continental (C) J | 4,000 | 2,100 | 146 | solid | 36x4 | 36x4d | under hood | 4 | 3 | 4¼x5½ | 27.20 | pairs | left | cent | cell-cast | sing | Bosch* | fixed |
| Continental (C) M | 7,000 | 3,000 | 168* | solid | 36x5 | 36x5d | under hood | 4 | 3 | 4¾x5½ | 32.40 | pairs | left | cent | cell-cast | sing | Bosch* | fixed |
| Corbitt B | 2,000 | 2,250 | 130 | solid | 36x3½ | 36x4 | under hood | 4 | 3 | 3¾x5½ | 22.50 | block | left | cent | fin-cast | sing | Eisemann | hand |
| Corbitt A | 4,000 | 2,500 | 145* | solid | 36x3½ | 36x3½d | under hood | 4 | 3 | 4¼x5½ | 27.20 | block | left | cent | fin-cast | sing | Eisemann | hand |

**ABBREVIATIONS: General,** *, *with other options;* opt, *optional.* **Price,** -c, *complete with body.* **Tires, Kind,** Pneu, *pneumatic;* Cush, *cushion;* p & s, *pneumatic in front and solid in rear;* s & st, *solid in front and steel in rear.* **Tire Sizes,** d, *dual.* **Motor Location,** btw seats, *between seats;* under flr, *under floor.* **Cylinders Cast,** sing, *singly or individually.* **Location of Valves,** opp, *opposite or T-head type;* top (two cylinder motors only), *L-head cylinder laid horizontal with valves up;* r & h, *at right and in head, L-head cylinder;* l & h, *at left and in head, L-head cylinder;* 2-cyc, *two-cycle motor, no valves.* **Water Circulation,** cent, *centrifugal pump;* gear, *gear pump;* thermo, *thermo-syphon circulation;* air, *air cooled, no water.* **Radiator Type and Case,** fin-sheet, *finned-tube core with sheet metal casing;* fin-cast, *finned-tube core with cast aluminum casing;* sq-t-sheet, *square tube or flat tube core with sheet metal casing;* sq-t-cast, *square tube core with cast aluminum casing;* cell-sheet, *cellular or honeycomb core with sheet metal casing;* cell-cast, *cellular core with cast aluminum casing;* z-z-t-sheet, *zig-zag tube core with sheet metal casing;* z-z-t-cast, *zig-zag tube core with cast aluminum casing;* ring-cast, *copper tube core arranged in a ring about a centrifugal fan with a cast aluminum casing.* **Ignition, Type,** sing, *single;* doub, *double.* **Make of Magneto** (or other sparking device), Atw. Kent, *Atwater Kent.* **Spark Advance,** auto, *automatic;* auto-h, *automatic advance with hand adjustment;* 2-pt, *two-point fixed, battery circuit fixed in retard, magneto in advance.*

# Including Features That Offer Comparison

## and Stroke, Number of Cylinders, Etc., of All Models Made by Each the Abbreviations Used in the Several Columns

| MOTOR | | | | | | TRANSMISSION | | | | | | | SPRINGS | | CONTROL | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GOVERNOR | | SPEED | | | | | GEARSET | | | | | | | | | | |
| Type | Drive | Motor in r.p.m | Truck in m.p.h. | Carbureter Make | Lubrication | Clutch Type | Type | Location | Speeds | Total Gear Reduction in High | Final Drive | Torque Taken By | Propulsion Taken By | Front | Rear | Steer | Levers | Name and Model |
| none | none | ..... | ..... | Schebler | circ-spl | none | elec | amid | 2 | 28.00 –1 | int-g-f | rad-rd | rad-rd | ½-ell | ½-ell | right | right | A & B |
| none | none | ..... | ..... | Schebler | circ-spl | none | elec | amid | 2 | 28.00 –1 | int-g-f | rad-rd | rad-rd | ½-ell | ½-ell | right | right | A & B |
| cent | motor | 1,200 | 17 | Rayfield | spl-press | dry-d | selec | unit-m | 3 | 7.75 –1 | top worm | springs | springs | ½-ell | ½-ell | left | cent | Acme |
| cent | motor | 2,200 | 25 | Zenith | circ-spl | dry-d | selec | unit-j | 3 | 7.45 –1 | dbl chn | ..... | rad-rd | ½-ell | ½-ell | left | cent | Adams....A |
| cent | motor | 2,200 | 20 | Zenith | circ-spl | dry-d | selec | unit-j | 3 | 7.45 –1 | dbl chn | ..... | rad-rd | ½-ell | ½-ell | left | cent | Adams....D |
| cent | motor | 2,200 | 18 | Zenith | circ-spl | dry-d | selec | unit-j | 3 | 8.40 –1 | dbl chn | ..... | rad-rd | ½-ell | ½-ell | left | cent | Adams....E |
| none | none | 1,600 | 16 | Schebler | circ-spl | dry-d | selec | unit-m | 3 | 8.00 –1 | dbl chn | ..... | rad-rd | ½-ell | ½-ell | left | cent | Armleder....HC |
| none | none | 1,600 | 16 | Schebler | circ-spl | dry-d | selec | unit-m | 3 | 8.00 –1 | top worm | springs | rad-rd | ½-ell | ½-ell | left | cent | Armleder....HW |
| none | none | 1,600 | 14 | Schebler | circ spl | dry d | selec | unit m | 3 | 9.00 –1 | dbl chn | ..... | rad-rd | ½-ell | ½-ell | left | cent | Armleder....EC |
| none | none | 1,500 | 13 | Schebler | circ spl | dry d | selec | unit-m | 3 | 8.75 –1 | top worm | springs | rad-rd | ½-ell | ½-ell | left | cent | Armleder....HW |
| cent | motor | 1,200 | 16½ | Zenith | circ-spl | dry d | selec | unit m | 4 | 7.75 –1 | top worm | springs | springs | ½-ell | ½-ell | right | right | Atterbury....6B |
| cent | motor | 1,200 | 15½ | Zenith | circ-spl | dry-d | selec | unit-m | 4 | 8.50 –1 | top worm | springs | springs | ½-ell | ½-ell | right | right | Atterbury....6C |
| cent | motor | 1,125 | 13 | Zenith | circ-spl | dry-d | selec | unit-m | 4 | 10.30 –1 | top worm | springs | springs | ½-ell | ½-ell | right | right | Atterbury....6D |
| none | none | 1,800 | 25 | Stromberg | splash | dry-p | prog | amid | 3 | 7.10 –1 | doub-red | springs | springs | ½-ell | plat | right | right | Autocar....21F |
| cent | motor | 1,200 | 18 | Stromberg | circ-spl | dry-d | selec | unit-m | 3 | 7.00 –1 | top worm | springs | springs | ½-ell | ½-ell | left | cent | Available |
| cent | motor | 1,200 | 15 | Stromberg | circ-spl | dry-d | selec | unit-m | 3 | 7.75 –1 | top worm | springs | springs | ½-ell | ½-ell | left | cent | Available |
| cent | motor | 1,200 | 14 | Stromberg | circ-spl | dry-d | selec | unit-m | 3 | 10.33 –1 | top worm | springs | rad-rd | ½-ell | ½-ell | left | cent | Available |
| cent | motor | 1,200 | 15 | Rayfield | spl-press | dry-d | selec | unit-m | 3 | 7.75 –1 | dbl chn | ..... | rad-rd | ½-ell | ½-ell | left | cent | Avery....C |
| l-b | motor | 1,200 | 14½ | Rayfield | spl-press | dry-d | selec | unit-j | 3 | 3.50 –1 | dbl chn | ..... | rad-rd | ½-ell | ½-ell | right | cent | Avery....B |
| cent | motor | 1,200 | 13 | Rayfield | spl-press | dry-p | selec | unit-j | 3 | 3.50 –1 | dbl chn | ..... | rad-rd | ½-ell | ½-ell | right | cent | Avery....B |
| cent | motor | 1,200 | 12 | Rayfield | spl-press | dry-d | selec | unit-j | 3 | 3.50 –1 | dbl chn | ..... | rad-rd | ½-ell | ½-ell | right | cent | Avery....A |
| cent | motor | 1,000 | 10 | Schebler | spl-press | wet-d | selec | unit-j | 3 | 12.50 –1 | dbl chn | ..... | rad-rd | ½-ell | ½-ell | right | cent | Avery....B |
| none | none | 1,500 | 27 | Stromberg | spl-press | dry-p | selec | unit-m | 4 | ..... | top worm | springs | springs | ½-ell | ½-ell | left | cent | Barker....U |
| none | none | 1,500 | 20 | Stromberg | spl-press | dry-p | selec | unit-m | 4 | ..... | top worm | springs | springs | ½-ell | ½-ell | left | cent | Barker....V |
| none | none | 1,500 | 25 | Bauer | circ-spl | wet-d | selec | unit-m | 3 | ..... | doub-red | tor-arm | tor-arm | ½-ell | ellip | left | cent | Bauer....A |
| none | none | 1,500 | 25 | Bauer | circ-spl | wet-d | selec | unit-m | 3 | ..... | doub-red | tor-arm | tor-arm | ½-ell | ellip | left | cent | Bauer....B |
| none | none | ..... | 21 | Rayfield | circ-spl | dry-d | selec | unit-m | 3 | 6.50 –1 | int-gear | springs | springs | ½-ell | ½-ell | left | cent | Bessemer....G |
| cent | motor | 1,140 | 16½ | Rayfield | circ-spl | cone | selec | amid | 3 | 7.20 –1 | dbl chn | ..... | rad-rd | ½-ell | plat | left | cent | Bessemer....A |
| cent | motor | 1,140 | 15 | Rayfield | circ-spl | cone | selec | amid | 3 | 7.75 –1 | top worm | springs | springs | ½-ell | ½-ell | left | cent | Bessemer....D |
| cent | motor | 1,090 | 12 | Rayfield | circ-spl | cone | selec | amid | 3 | 10.33 –1 | top worm | springs | rad-rd | ½-ell | ½-ell | left | cent | Bessemer....E |
| cent | motor | 1,100 | 15 | Schebler | circ-spl | cone | ind-c | amid | 3 | 7.67 –1 | top worm | sub-f | sub-f | ½-ell | ½-ell | right | right | Blair....2C |
| cent | motor | 1,100 | 14 | Schebler | circ-spl | cone | ind-c | amid | 3 | 8.67 –1 | top worm | sub-f | sub-f | ½-ell | ½-ell | right | right | Blair....2D |
| cent | motor | 1,000 | 12 | Schebler | circ-spl | cone | ind-c | amid | 3 | 9.33 –1 | top worm | sub-f | sub-f | ½-ell | ½-ell | right | right | Blair....2E |
| cent | motor | 1,100 | 10 | Schebler | circ-spl | cone | ind-c | amid | 3 | 12.00 –1 | top worm | sub-f | sub-f | ½-ell | ½-ell | right | right | Blair....2F |
| elec | ..... | 1,200 | 18 | Schebler | circ-spl | wet-d | selec | unit-m | 3 | 6.00 –1 | int-g-4 | tor-arm | tor-arm | ½-ell | ¾-ell | left | cent | Bollstrom....A |
| none | none | 1,500 | 30 | Carter | circ-spl | none | fric | unit-j | 3 | 4.00 –1 | dbl chn | ..... | rad-rd | ½-ell | ½-ell | left | left | Brasie....Packet |
| none | none | 1,200 | 20 | Stromberg | circ-spl | dry-d | selec | unit-m | 3 | 6.20 –1 | top worm | springs | springs | ½-ell | ½-ell | left | cent | Brinton....H |
| cent | motor | 1,200 | 35 | Stromberg | circ-spl | dry-d | selec | unit-m | 3 | 8.75 –1 | top worm | springs | springs | ½-ell | ½-ell | left | cent | Brinton....F |
| suct | motor | 1,300 | 15 | Schebler | circ-spl | cone | selec | unit-j | 3 | 8.25 –1 | dbl chn | ..... | rad-rd | ½-ell | plat | left | cent | Brockway....H |
| suct | motor | 1,300 | 15 | Schebler | circ-spl | dry-d | selec | unit-m | 3 | 8.67 –1 | top worm | springs | springs | ½-ell | ½-ell | left | cent | Brockway....J |
| suct | motor | 1,300 | 15 | Schebler | circ-spl | cone | selec | unit-j | 3 | 8.25 –1 | dbl chn | ..... | rad-rd | ½-ell | plat | left | cent | Brockway....I |
| suct | motor | 1,300 | 15 | Schebler | circ-spl | dry-d | selec | unit-m | 3 | 8.67 –1 | top worm | springs | springs | ½-ell | ½-ell | left | cent | Brockway....K |
| none | none | 1,750 | 30 | Marvel | circ-spl | cone | selec | unit-m | 3 | 6.00 –1 | bevel | tor-t | tor-t | ½-ell | ellip | left | cent | Buick....D4 |
| ..... | ..... | 1,200 | 15 | Zenith | spl-press | cone | selec | unit-m | 3 | 8.50 –1 | int-gear | springs | springs | ½-ell | ½-ell | right | cent | Burford....O |
| ..... | ..... | 1,000 | 13 | Zenith | spl-press | dry-d | selec | amid | 4 | 8.75 –1 | top worm | springs | rad-rd | ½-ell | ½-ell | right | right | Burford....D |
| suct | motor | 1,200 | 20 | Holley | spl-press | dry-p | selec | unit-m | 3 | 6.75 –1 | top worm | springs | springs | ½-ell | ½ ell | left | cent | Chase....A |
| cent | motor | 1,200 | 18 | Holley | circ-spl | dry-d | selec | unit-m | 3 | 7.75 –1 | top worm | springs | springs | ½-ell | ½-ell | right | cent | Chase....R |
| cent | motor | 1,200 | 14 | Holley | circ-spl | dry-d | selec | unit-m | 4 | 9.25 –1 | top worm | springs | springs | ½-ell | ½-ell | right | cent | Chase....O |
| cent | motor | 1,000 | 15 | Schebler | pressure | dry-p | selec | unit-m | 3 | ..... | top worm | springs | springs | ellip | ½-ell | right | right | Coleman....J |
| cent | motor | 1,000 | 12 | Schebler | pressure | cone | selec | unit-j | 3 | ..... | dbl chn | ..... | rad-rd | ellip | plat | right | right | Coleman....H |
| none | none | ..... | 30 | Breeze | circ-spl | cone | selec | unit-m | 3 | 6.00 –1 | bevel | tor-arm | springs | ½-ell | ½-ell | left | cent | Commerce....N |
| cent | motor | 1,150 | 12 | Stromberg | pressure | none | elec | unit-m | 2 | ..... | int-g-4 | springs | rad-rd | ½-ell | ½-ell | left | cent | C.T. |
| cent | motor | 1,350 | 10 | Stromberg | pressure | none | elec | unit-m | 2 | ..... | int-g-4 | springs | rad-rd | ½-ell | ½-ell | left | cent | C.T. |
| cent | motor | 1,350 | 10 | Stromberg | pressure | none | elec | unit-m | 2 | ..... | int-g-4 | springs | rad-rd | ½-ell | ½-ell | left | cent | C.T....Tractor |
| suct | motor | ..... | ..... | Stromberg | circ-spl | dry-d | selec | unit-m | 3 | 7.75 –1 | top worm | springs | springs | ½-ell | ½-ell | left* | cent | Continental (C)....FL |
| suct | motor | ..... | ..... | Stromberg | circ-spl | dry-d | selec | unit-m | 3 | 9.25 –1 | top worm | springs | springs | ½-ell | ½-ell | left* | cent | Continental (C)....HL |
| suct | motor | ..... | ..... | Stromberg | circ-spl | dry-d | selec | unit-m | 3 | 9.25 –1 | top worm | springs | springs | ½-ell | ½-ell | left* | cent | Continental (C)....J |
| suct | motor | ..... | 18 | Stromberg | circ-spl | dry-d | selec | unit-m | 3 | 10.50 –1 | top worm | springs | springs | ½-ell | ½-ell | left* | cent | Continental (C)....M |
| cent | motor | 1,100 | 16 | Stromberg | circ-spl | dry-d | selec | unit-m | 3 | 7.75 –1 | top worm | springs | springs | ½-ell | ½-ell | left | cent | Corbitt....B |
| cent | motor | 1,100 | 15 | Stromberg | circ-spl | dry-d | selec | unit-m | 3 | 8.67 –1 | top worm | springs | springs | ½-ell | ½-ell | left | cent | Corbitt....A |

**ABBREVIATIONS:** (continued). **Governor Type,** cent, *centrifugal;* l-b, *loose-ball;* suct, *suction;* nyd, *hydraulic;* elec, *electric.* **Governor Drive,** motor, *from motor;* d-shaft, *from driving shaft;* f-wheel, *from front wheel;* duplex, *from both the motor and driving shaft by overrunning clutches.* **Lubrication,** splash, *non-circulating or simple splash;* circ-spl, *circulating splash;* spl-press, *splash-pressure;* fuel-inj, *fuel injection, oil mixed with fuel;* pressure, *pressure feed, no splash.* **Clutch Type,** dry-p, *dry plate;* dry-d, *dry multiple disk;* wet-d, *wet disk or disk-in-oil;* wet-p, *wet plate or plate-in-oil;* r-cone, *reversed cone or inverted cone;* cont-b, *contracting band;* exp-s, *expanding shoe.* **Gearset Type,** prog, *progressive sliding gear;* selec, *selective sliding gear;* plan, *planetary;* ind-c, *constant-mesh, individual-clutch;* fric, *friction;* elec, *electric.* **Gearset Location,** amid, *amidships;* unit-m, *unit with motor;* unit-j, *unit with jackshaft;* unit-x, *unit with axle.* **Gearset Speeds,** inf, *infinite number.* **Final Drive,** int-g, int-gear, *internal-gear;* sing chn, *single chain;* dbl chn, *double chain;* doub-red, *double reduction;* spur-g, *spur gears;* sp-bev, *spiral bevel;* f, *front wheel or wheels;* 4, *four-wheel driven.* **Torque Taken By,** rad-rd, *radius rods;* tor-arm, *torque arm;* tor-t, *torsion tube;* sub-f, *sub-frame.* **Propulsion Taken By,** rad-rd, *radius rod;* tor-t, *torsion tube;* tor-arm, *torque arm;* sub-f, *sub-frame.* **Springs,** ellip, *elliptic;* ½-ell, *half elliptic;* ¼-ell, *quarter elliptic;* ¾-ell, *three-quarters elliptic;* plat, *platform;* cant, *cantilever.* **Control Levers,** cent, *center;* c & r, *gearshift center, brake right;* c & l, *gearshift center, brake left.*

| Name and Model | Capacity in Pounds | Price of Chassis | Wheelbase in Inches | TIRES | | | MOTOR | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Kind | SIZES IN INCHES | | Location | No. of Cylinders | No. of Crankshaft Bearings | Bore and Stroke | N.A.C.C. Hp. | Cylinders Cast | Valves Placed | COOLING | | IGNITION | | |
| | | | | | Front | Rear | | | | | | | | Water Circulation | Radiator Core and Case | Type | Make | Spark Advance |
| Couple-Gear.....HC | 7,000 | 4,800 | 144 | solid.... | 36x4d | 36x4d | under flr.... | 4 | 5 | 5¾x6 | 53.00 | sing.... | opp.... | gear.... | cell-sheet... | dual... | Mea..... | fixed... |
| Couple-Gear.....AC | 10,000 | 5,200 | 144 | solid.... | 36x5d | 36x5d | under flr.... | 4 | 5 | 5¾x6 | 53.00 | sing.... | opp.... | gear.... | cell-sheet... | dual... | Mea..... | fixed... |
| Croce.....16 | 1,000 | 800 | 104 | pneu.... | 32x4 | 32x4 | under hood.. | 4 | 2 | 3½x5 | 16.92 | block... | right... | cent.... | sq-t-sheet... | sing.... | Bosch..... | hand... |
| Croce..... | 3,000 | 1,900 | 120* | solid.... | 36x4 | 36x4 | btw seats... | 4 | 3 | 4 x5 | 25.60 | block... | right... | cent.... | sq-t-cast.... | sing.... | Bosch..... | hand... |
| Croce..... | 5,000 | 2,600 | 130 | solid.... | 36x5 | 36x6 | btw seats... | 4 | 3 | 4 x5 | 25.60 | block... | right... | cent.... | sq-t-cast.... | sing.... | Bosch..... | hand... |
| Crowther.....10-30 | 1,000 | 600 | 110 | pneu.... | 32x3½ | 33x4 | under hood.. | 4 | 3 | 3¾x4½ | 22.50 | block... | right... | thermo.. | fin-sheet.... | sing.... | Dixie..... | hand... |
| Dart.....BB | 1,500 | 1,300 | 124 | solid.... | 36x3 | 36x4 | under hood.. | 4 | 3 | 3½x5½ | 19.61 | block... | right... | thermo.. | cell-sheet... | sing.... | Eisemann.... | fixed... |
| Dart.....B | 2,000 | 1,400 | 138* | solid.... | 36x3 | 36x3½ | under hood.. | 4 | 3 | 3½x5½ | 19.61 | block... | right... | thermo.. | cell-sheet... | sing.... | Eisemann.... | fixed... |
| Dart.....C | 4,000 | 1,900 | 144* | solid.... | 34x4 | 38x3½d | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | right... | cent.... | cell-sheet... | sing.... | Eisemann.... | fixed... |
| Dart.....CC | 5,000 | 2,100 | 150 | solid.... | 36x4 | 36x4d | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | right... | cent.... | cell-sheet... | sing.... | Eisemann.... | fixed... |
| Dayton.....U | 4,000 | 2,650 | 118½ | solid.... | 36x4 | 36x3½d | under seats.. | 4 | 3 | 4½x5 | 29.00 | pairs... | opp.... | cent.... | fin-cast..... | dual... | Bosch..... | hand... |
| Dayton.....A | 7,000 | 3,400 | 136 | solid.... | 36x5 | 36x4d | under seats.. | 4 | 3 | 4½x5½ | 36.15 | pairs... | opp.... | cent.... | fin-cast..... | dual... | Bosch..... | hand... |
| Dayton.....B | 10,000 | 4,500 | 148 | solid.... | 36x6 | 42x5d | under seats.. | 4 | 3 | 5½x7 | 44.20 | pairs... | opp.... | cent.... | fin-cast..... | dual... | Bosch..... | hand... |
| Dayton.....E | 15,000 | 4,950 | 148 | solid.... | 36x7 | 42x6d | under seats.. | 4 | 3 | 5½x7 | 44.20 | pairs... | opp.... | cent.... | fin-cast..... | dual... | Bosch..... | hand... |
| DeKalb.....D1 | 3,000 | 1,950 | 134* | solid.... | 34x3½ | 36x5 | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | left.... | cent.... | fin-sheet.... | sing.... | Eisemann.... | hand... |
| DeKalb.....D2 | 5,000 | 2,450 | 136* | solid.... | 36x4 | 36x6 | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | left.... | cent.... | fin-sheet.... | sing.... | Eisemann.... | fixed... |
| Denby.....U | 1,500 | 890-c | 119 | solid.... | 34x3 | 34x3½ | under hood.. | 4 | 2 | 3½x4½ | 15.64 | block... | right... | thermo.. | sq-t-sheet... | sing.... | Dixie..... | fixed... |
| Denby.....B | 2,000 | 1,475 | 120 | solid.... | 34x3½ | 34x5 | under hood.. | 4 | 3 | 3½x5 | 19.61 | block... | right... | thermo.. | sq-t-cast.... | sing.... | Eisemann.... | fixed... |
| Denby.....D | 3,000 | 1,685 | 144* | solid.... | 36x3½ | 36x5 | under hood.. | 4 | 3 | 3½x5 | 22.50 | block... | right... | thermo.. | sq-t-cast.... | sing.... | Eisemann.... | fixed... |
| Denby.....E | 4,000 | 1,985 | 144* | solid.... | 36x4 | 36x6 | under hood.. | 4 | 3 | 3½x5 | 22.50 | block... | right... | thermo.. | sq-t-cast.... | sing.... | Eisemann.... | fixed... |
| Detroit.....B | 1,000 | ..... | 112 | pneu.... | 32x3½ | 32x3½ | under hood.. | 4 | 3 | 3¾x4½ | 22.50 | block... | left.... | thermo.. | cell-sheet... | sing.... | Dixie..... | hand... |
| Diamond-T.....JA-JB | 1,500 | 1,175 | 126* | solid.... | 36x3 | 36x3½* | under hood.. | 4 | 3 | 3½x5 | 19.61 | block... | right... | thermo.. | fin-sheet.... | sing.... | Bosch..... | fixed... |
| Diamond-T.....J2 | 3,000 | 2,050 | 160* | solid.... | 36x3½ | 36x5 | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | left.... | cent.... | sq-t-sheet... | sing.... | Bosch..... | fixed... |
| Diamond-T.....J3 | 4,000 | 2,200 | 160* | solid.... | 36x4 | 36x6 | under hood.. | ..... | ..... | ..... | ..... | block... | left.... | cent.... | sq-t-sheet... | sing.... | Bosch..... | fixed... |
| Diamond-T.....L | 7,000 | 3,300 | 164* | solid.... | 36x5 | 38x5d | under hood.. | 4 | 3 | 4½x5½ | 32.40 | pairs... | left.... | cent.... | sq-t-sheet... | sing.... | Bosch..... | hand... |
| Dispatch.....L | 1,200 | 900 | 120 | pneu.... | 36x3½ | 36x3½ | under hood.. | 4 | 3 | 3¾x5 | 22.50 | block... | left.... | thermo.. | cell-sheet... | sing.... | Bosch..... | hand... |
| Doane..... | 12,000 | 4,500-c | 178 | solid.... | 36x6 | 38x6d | under hood.. | 4 | 3 | 4¾x6½ | 36.15 | pairs... | left.... | cent.... | fin-cast..... | dual... | Bosch..... | hand... |
| Dorris.....IA4 | 1,500 | 1,900 | 144* | pneu.... | 36x4½ | 36x4½ | under hood.. | 4 | 3 | 4¾x5 | 30.65 | pairs... | head... | cent.... | cell-sheet... | dual... | Westinghouse. | auto-h.. |
| Dorris.....IAW | 4,000 | 2,500 | 162* | solid.... | 36x4 | 36x4d | under hood.. | 4 | 3 | 4¾x5 | 30.65 | pairs... | head... | cent.... | cell-cast.... | dual... | Bosch..... | hand... |
| Duplex.....C | 4,000 | 2,800 | 130* | solid.... | 36x4 | 36x4 | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | right... | cent.... | fin-sheet.... | sing.... | Bosch*..... | ..... |
| Duplex.....E | 4,000 | ..... | 130* | solid.... | 36x6 | 36x6 | under hood.. | 4 | 3 | 4½x5 | 29.00 | block... | right... | cent.... | fin-sheet.... | dual... | Bosch*..... | hand... |
| Duplex.....D | 6,000 | 3,300 | 130* | solid.... | 36x5 | 36x5 | under hood.. | 4 | 3 | 4½x5½ | 29.00 | block... | right... | cent.... | fin-sheet.... | sing.... | Bosch*..... | ..... |
| Duryea..... | 1,000 | 600 | 84 | solid.... | 38x1¾ | 42x1¾ | under body.. | 2 | 4 | 3¾x3¾ | ..... | sing.... | 2-cyc... | air..... | none..... | sing.... | Bosch..... | hand... |
| Dominion.....Tractor | 12,000 | 3,200 | 90 | solid.... | 36x4 | 36x4d | btw seats... | 4 | 3 | 4¾x5½ | 36.15 | pairs... | opp.... | cent.... | fin-cast..... | sing.... | Connecticut... | hand... |
| Falcon.....A | 1,000 | 715 | 106 | pneu.... | 31x4 | 31x4 | under hood.. | 4 | ..... | 3 x4 | 14.40 | block... | head... | thermo.. | cell-sheet... | sing.... | ..... | auto... |
| Fargo.....K | 2,000 | 1,175 | 130 | solid.... | 36x3 | 36x4 | under hood.. | 4 | 3 | 3¾x5 | 22.50 | block... | left.... | thermo.. | fin-sheet.... | sing.... | Bosch..... | hand... |
| Fargo.....N | 4,000 | 1,575 | 156 | solid.... | 36x4 | 36x6 | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | left.... | cent.... | fin-sheet.... | dual... | Bosch..... | hand... |
| Federal.....M | 3,000 | 1,800 | 144* | solid.... | 36x3½ | 36x5 | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | left.... | cent.... | cell-cast.... | sing.... | Eisemann.... | fixed... |
| Federal.....L | 7,000 | 2,800 | 146 | solid.... | 36x5 | 36x5d | under hood.. | 4 | 3 | 4½x5½ | 32.40 | pairs... | left.... | cent.... | cell-cast.... | sing.... | Eisemann.... | fixed... |
| F.W.D.....G | 3,000 | 3,600 | 124 | solid.... | 36x4 | 36x4 | under seats.. | 4 | 3 | 4½x5 | 32.40 | pairs... | opp.... | cent.... | sq-t-sheet... | sing.... | Bosch..... | hand... |
| F.W.D.....B | 6,000 | 4,000 | 124 | solid.... | 36x6 | 36x6 | under seats.. | 4 | 3 | 4¾x5½ | 36.15 | pairs... | opp.... | cent.... | sq-t-sheet... | sing.... | Eisemann.... | hand... |
| F.W.D.....M | 10,000 | 4,800 | 148 | solid.... | 38x5d | 38x5d | under seats.. | 4 | 3 | 5½x7 | 44.20 | pairs... | opp.... | cent.... | cell-sheet... | dual... | Bosch..... | hand... |
| Gabriel.....H | 1,500 | 1,600 | 126 | pneu.... | 34x4½ | 34x4½ | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | left.... | cent.... | z-z-t-sheet.. | sing.... | Bosch..... | hand... |
| Gabriel.....O | 2,000 | 1,800 | 136 | pneu.... | 36x5 | 36x5 | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | left.... | cent.... | z-z-t-sheet.. | sing.... | Bosch..... | hand... |
| Gabriel.....M | 3,000 | 2,200 | 144 | pneu.... | 36x5 | 36x5d | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | left.... | cent.... | z-z-t-sheet.. | sing.... | Bosch..... | hand... |
| Garford.....64 | 1,500 | 1,350 | 120 | p & s.... | 34x4½ | 36x3½ | under hood.. | 4 | 3 | 3½x5½ | 19.61 | block... | right... | thermo.. | cell-sheet... | sing.... | Dixie..... | hand... |
| Garford.....75 | 2,000 | 1,450 | 120 | p & s.... | 34x4½ | 36x4 | under hood.. | 4 | 3 | 3½x5½ | 19.61 | block... | right... | thermo.. | cell-sheet... | sing.... | Dixie..... | hand... |
| Garford.....66 | 3,000 | 1,800 | 142* | solid.... | 36x3½ | 36x5 | under hood.. | 4 | 3 | 3¾x5½ | 22.50 | block... | right... | cent.... | cell-sheet... | sing.... | Dixie..... | hand... |
| Garford.....70 | 4,000 | 2,300 | 142* | solid.... | 36x4 | 36x4d | under hood.. | 4 | 3 | 4¼x5½ | 29.00 | block... | right... | cent.... | cell-sheet... | sing.... | Dixie..... | hand... |
| Garford.....D | 10,000 | 4,300 | 128* | solid.... | 36x6 | 40x6d | btw seats... | 4 | 3 | 4¾x5½ | 36.15 | pairs... | opp.... | cent.... | cell-sheet... | sing.... | Dixie..... | hand... |
| Garford.....F | 12,000 | 4,500 | 128* | solid.... | 36x6 | 40x7d | btw seats... | 4 | 3 | 5 1/10x5½ | 41.61 | pairs... | opp.... | cent.... | cell-sheet... | sing.... | Dixie..... | hand... |
| G. A. Schacht..... | 4,000 | 2,800 | 138* | solid.... | 38x3½ | 40x3½d | under hood.. | 4 | 3 | 4½x5½ | 29.00 | block... | r & h... | cent.... | cell-sheet... | sing.... | Eisemann.... | hand... |
| G. A. Schacht..... | 6,000 | 3,200 | 168* | solid.... | 38x4 | 38x5d | under hood.. | 4 | 3 | 4½x5½ | 29.00 | block... | r & h... | cent.... | cell-sheet... | sing.... | Eisemann.... | hand... |
| Gersix.....C | 5,000 | 2,500 | 148* | solid.... | 36x4 | 36x7 | under hood. | 6 | 4 | 3¾x5½ | 33.75 | block... | left.... | cent.... | sq-t-cast.... | sing.... | battery..... | fixed... |
| G.M.C.....15 | 1,500 | 1,090 | 122 | pneu.... | 35x5 | 35x5 | under hood.. | 4 | 3 | 3½x5 | 19.61 | block... | right... | cent.... | fin-sheet.... | sing.... | Eisemann.... | hand... |
| G.M.C.....25 | 2,500 | 1,800 | 144* | solid.... | 36x3½ | 36x5 | under hood.. | 4 | 3 | 3¾x5 | 22.50 | block... | right... | cent.... | fin-cast..... | sing.... | Eisemann.... | hand... |
| G.M.C.....26 | 2,500 | 1,800 | 144* | solid.... | 36x3½ | 36x5 | under hood.. | 4 | 3 | 3¾x5 | 22.50 | block... | right... | cent.... | fin-cast..... | sing.... | Eisemann.... | hand... |
| G.M.C.....31 | 3,000 | 1,900 | 144* | solid.... | 36x3½ | 36x5 | under hood.. | 4 | 3 | 3¾x5 | 22.50 | block... | right... | cent.... | fin-cast..... | sing.... | Eisemann.... | hand... |
| G.M.C.....40 | 4,000 | 2,375 | 158* | solid.... | 36x4 | 36x4d | under hood.. | 4 | 3 | 4¼x5½ | 27.20 | block... | right... | cent.... | fin-cast..... | sing.... | Eisemann.... | hand... |
| G.M.C.....41 | 4,000 | 2,375 | 158* | solid.... | 36x4 | 36x4d | under hood.. | 4 | 3 | 4¼x5½ | 27.20 | block... | right... | cent.... | fin-cast..... | sing.... | Eisemann.... | hand... |
| G.M.C.....70 | 7,000 | 3,175 | 163* | solid.... | 36x5 | 40x5d | under hood.. | 4 | 3 | 4½x5½ | 32.40 | pairs... | left.... | cent.... | fin-cast..... | sing.... | Eisemann.... | hand... |
| G.M.C.....71 | 7,000 | 3,175 | 163* | solid.... | 36x5 | 40x5d | under hood.. | 4 | 3 | 4½x5½ | 32.40 | pairs... | left.... | cent.... | fin-cast..... | sing.... | Eisemann.... | hand... |
| G.M.C.....100 | 10,000 | ..... | 163* | solid.... | 36x6 | 40x6d | under hood.. | 4 | 3 | 4½x5½ | 32.40 | pairs... | left.... | cent.... | fin-cast..... | sing.... | Eisemann.... | hand... |
| G.M.C.....101 | 10,000 | ..... | 163* | solid.... | 36x6 | 40x6d | under hood.. | 4 | 3 | 4½x5½ | 32.40 | pairs... | left.... | cent.... | fin-cast..... | sing.... | Eisemann.... | hand... |
| Geneva.....1 | 1,500 | ..... | 96 | solid.... | 34x2 | 36x2½ | under hood.. | 2 | 2 | 5½x4½ | 22.10 | sing.... | head... | gear.... | fin-sheet.... | sing.... | Simms..... | fixed... |
| Gramm-Bernstein..... | 2,000 | 1,500 | 118 | solid.... | 34x3 | 34x4 | under hood.. | 4 | 3 | 3½x5½ | 19.61 | block... | right... | thermo.. | fin-cast..... | sing.... | Bosch..... | hand... |
| Gramm-Bernstein..... | 3,000 | 1,800 | 130* | solid.... | 34x3½ | 36x5 | under hood.. | 4 | 3 | 3½x5½ | 19.61 | block... | right... | thermo.. | fin-cast..... | sing.... | Bosch..... | hand... |
| Gramm-Bernstein..... | 5,000 | 2,600 | 156 | solid.... | 36x4 | 36x4d | under hood.. | 4 | 3 | 4¼x5½ | 29.00 | pairs... | left.... | cent.... | fin-cast..... | dual... | Bosch..... | hand... |
| Gramm-Bernstein..... | 7,000 | 3,400 | 168 | solid.... | 36x5 | 40x5d | under hood.. | 4 | 3 | 4¼x5½ | 29.00 | pairs... | left.... | cent.... | fin-cast..... | dual... | Bosch..... | hand... |
| Gramm-Bernstein..... | 12,000 | 4,300 | 168* | solid.... | 36x6 | 40x6d | under hood.. | 4 | 3 | 4¾x6½ | 32.40 | pairs... | left.... | cent.... | fin-cast..... | dual... | Bosch..... | hand... |

**ABBREVIATIONS: General,** *, *with other options;* opt, *optional.* **Price,** -c, *complete with body.* **Tires, Kind,** Pneu, *pneumatic;* Cush, *cushion;* p & s, *pneumatic in front and solid in rear;* s & st, *solid in front and steel in rear.* **Tire Sizes,** d, *dual.* **Motor Location,** btw seats, *between seats;* under flr, *under floor.* **Cylinders Cast,** sing, *singly or individually.* **Location of Valves,** opp, *opposite or T-head type;* top (two-cylinder motors only), *L-head cylinder laid horizontal with valves up;* r & h, *at right and in head, L-head cylinder;* l & h, *at left and in head, L-head cylinder;* 2-cyc, *two-cycle motor, no valves.* **Water Circulation,** cent, *centrifugal pump;* gear, *gear pump;* thermo, *thermo-syphon circulation;* air, *air-cooled, no water.* **Radiator Type and Case,** fin-sheet, *finned-tube core with sheet metal casing;* fin-cast, *finned-tube core with cast aluminum casing;* sq-t-sheet, *square tube or flat tube core with sheet metal casing;* sq-t-cast, *square tube core with cast aluminum casing;* cell-sheet, *cellular or honeycomb core with sheet metal casing;* cell-cast, *cellular core with cast aluminum casing;* z-z-t-sheet, *zig-zag tube core with sheet metal casing;* z-z-t-cast, *zig-zag tube core with cast aluminum casing;* ring-cast, *copper tube core arranged in a ring about a centrifugal fan with a cast aluminum casing.* **Ignition, Type,** sing, *single;* doub, *double.* **Make of Magneto** (or other sparking device), Atw. Kent, *Atwater Kent.* **Spark Advance,** auto, *automatic;* auto-h, *automatic advance with hand adjustment;* 2-pt, *two-point fixed, battery circuit fixed in retard, magneto in advance.*

| MOTOR | | | | | TRANSMISSION | | | | | | | | SPRINGS | | CONTROL | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GOVERNOR | | SPEED | | | | GEARSET | | | | | | | | | | | |
| Type | Drive | Motor in r.p.m. | Truck in m.p.h. | Carbureter Make | Lubrication | Clutch Type | Type | Location | Speeds | Total Gear Reduction in High | Final Drive | Torque Taken By | Propulsion Taken By | Front | Rear | Steer | Levers | Name and Model |
| none | none | ..... | 15 | Stromberg | spl-press | none | elec | unit-m | 1 | 25.00 –1 | bevel-4 | springs | rad-rd | ½-ell | ½-ell | right | ..... | Couple-Gear HC |
| none | none | ..... | 12 | Stromberg | spl-press | none | elec | unit-m | 1 | 25.00 –1 | bevel-4 | tor-arm | rad-rd | ½-ell | ½-ell | right | ..... | Couple-Gear AC |
| none | none | 1,000 | 25 | Rayfield | circ-spl | dry-d | selec | unit-m | 3 | ..... | bevel | springs | springs | ½-ell | ½-ell | left | cent | Croce 16 |
| none | none | 1,000 | 15 | Rayfield | spl-press | cone | selec | amid | 3 | ..... | top worm | springs | springs | ½-ell | ½-ell | right | right | Croce |
| none | none | 1,000 | 15 | Rayfield | spl-press | cone | selec | amid | 3 | ..... | top worm | springs | springs | ½-ell | ½-ell | right | right | Croce |
| none | none | 3,000 | 35 | Mayer | pressure | none | rollers | unit-j | 3 | ..... | rollers | tor-t | sub-f | ½-ell | ¾-ell | left | cent | Crowther 10-30 |
| none | none | ..... | 20 | Stromberg | spl-press | dry-d | prog | unit-m | 3 | 5.80 –1 | top worm | springs | springs | ½-ell | ½-ell | left | cent | Dart BB |
| ..... | ..... | ..... | 22 | Stromberg | spl-press | dry-d | selec | unit-m | 3 | 8.25 –1 | dbl chn | ..... | rad-rd | ½-ell | ½-ell | left | cent | Dart B |
| ..... | ..... | 1,500 | 20 | Stromberg | spl-press | cone | selec | unit-j | 3 | 8.25 –1 | dbl chn | ..... | rad-rd | ½-ell | ½-ell | left | cent | Dart C |
| cent | duplex | 1,500 | 17 | Stromberg | spl-press | dry-d | selec | unit-m | 3 | 7.75 –1 | top worm | springs | springs | ½-ell | ½-ell | left | cent | Dart CC |
| cent | duplex | 1,000 | 13½ | Stromberg* | circ-spl | wet-d | selec | unit-j | 3 | 9.16 –1 | dbl chn | ..... | rad-rd | ½-ell | plat | left | cent | Dayton U |
| cent | duplex | 1,000 | 11 | Stromberg* | circ-spl | wet-d | selec | unit-j | 3 | 9.40 –1 | dbl chn | ..... | rad-rd | ½-ell | plat | left | cent | Dayton A |
| cent | duplex | 1,000 | 10 | Stromberg* | circ-spl | wet-d | selec | unit-j | 4 | 12.00 –1 | dbl chn | ..... | rad-rd | ½-ell | plat | left | cent | Dayton B |
| cent | duplex | 1,000 | 10 | Stromberg* | circ-spl | wet-d | selec | unit-j | 4 | 12.00 –1 | dbl chn | ..... | rad-rd | ½-ell | plat | left | cent | Dayton E |
| cent | motor | 1,162 | 18 | Stromberg | spl-press | dry-d* | selec | amid* | 3 | 6.83 –1 | top worm* | springs | springs* | ½-ell | ½-ell | left | cent | DeKalb D1 |
| cent | motor | 1,100 | 14 | Stromberg | spl-press | dry-d* | selec | amid* | 3 | 8.25 –1 | top worm* | springs | springs* | ½-ell | ½-ell | left | cent | DeKalb D2 |
| cent | motor | 1,600 | 20 | Denby | circ-spl | dry-p | selec | unit-m | 3 | 8.20 –1 | int-gear | springs | springs | ½-ell | ½-ell | left | cent | Denby U |
| cent | motor | 1,375 | 18 | Stromberg | circ-spl | dry-p | selec | unit-m | 3 | 7.40 –1 | int-gear | springs | springs | ½-ell | ½-ell | left | c & l | Denby B |
| cent | motor | 1,327 | 15 | Stromberg | circ-spl | dry-p | selec | unit-m | 3 | 9.46 –1 | int-gear | springs | springs | ½-ell | ½-ell | left | cent | Denby D |
| cent | motor | 1,327 | 14 | Stromberg | circ-spl | dry-p | selec | unit-m | 3 | 9.46 –1 | int-gear | springs | springs | ½-ell | ½-ell | left | cent | Denby E |
| none | none | 2,800 | 58 | opt | circ-spl | wet-d | selec | unit-m | 3 | 4.25 –1 | bevel | tor-arm | springs | ½-ell | cant | left | cent | Detroit B |
| none | none | 1,500 | 23 | Rayfield | circ-spl | dry-d | selec | unit-m | 3 | 7.00 –1* | top worm | springs | springs | ½-ell | ½-ell | left | ..... | Diamond-T JA-JB |
| cent | motor | 1,200 | 14 | Rayfield | circ-spl | dry-d | selec | unit-m | 3 | 7.75 –1 | top worm | springs | springs | ½-ell | ½-ell | right | ..... | Diamond-T J2 |
| cent | motor | 1,200 | 14 | ..... | circ-spl | dry-d | selec | unit-m | 3 | 7.75 –1 | top worm | springs | springs | ½-ell | ½-ell | right | ..... | Diamond-T J3 |
| cent | motor | ..... | ..... | Rayfield | circ-spl | dry-d | selec | unit-m | 4 | 8.75 –1 | top worm | springs | rad-rd | ½-ell | ½-ell | right | ..... | Diamond-T L |
| suct | motor | 1,500 | 25 | Rayfield | pressure | none | fric | unit-j | 4 | 3.12 –1 | dbl chn | ..... | rad-rd | ellip | ellip | right | right | Dispatch L |
| ..... | ..... | 1,000 | 10 | Schebler | circ-spl | dry-d | selec | unit-m | 3 | 10.50 –1 | dbl chn | ..... | rad-rd | ½-ell | ½-ell | right | cent | Doane |
| none | none | 1,143 | 30 | Stromberg | circ-spl | dry-d | selec | unit-m | 3 | 4.08 –1 | bevel | tor-arm | springs | ½-ell | plat | left | cent | Dorris IA4 |
| cent | motor | 1,085 | 15 | Stromberg | circ-spl | dry-d | selec | unit-m | 3 | 7.75 –1 | top worm | springs | springs | ½-ell | ½-ell | left | cent | Dorris IAW |
| cent | duplex | 1,500 | 20 | Schebler | circ-spl | dry-d | selec | unit-m | 4 | 8.00 –1 | int-g-4 | tor-arm | rad-rd | ½-ell | ½-ell | left | cent | Duplex C |
| cent | duplex | 1,240 | 12 | Schebler | circ-spl | dry-d | selec | unit-m | 8 | 8.00 –1 | int-g-4 | tor-arm | rad-rd | ½-ell | ½-ell | left | cent | Duplex E |
| cent | duplex | 1,250 | 10 | Schebler | circ-spl | dry-d | selec | unit-m | 4 | 8.00 –1 | int-g-4 | tor-arm | rad-rd | ½-ell | ½-ell | left | cent | Duplex D |
| none | none | 3,000 | 30 | Kingston | fuel-inj | none | rollers | unit-m | 2 | 10.00 –1 | rollers | sub-f | sub-f | ¼-ell | ½-ell | left | cent | Duryea |
| suct | motor | 1,000 | 9 | Schebler | pressure | dry-d | selec | unit-m | 3 | ..... | top worm | springs | springs | ½-ell | ½-ell | left | c & l | Dominion Tractor |
| none | none | 2,600 | 30 | Zenith | circ-spl | cone | selec | unit-m | 3 | 5.00 –1 | bevel | ..... | rad-rd | ½-ell | plat | left | cent | Falcon A |
| none | none | 1,100 | 18 | Rayfield | spl-press | dry-d | selec | unit-m | 3 | 6.50 –1 | int-gear | springs | springs | ½-ell | ½-ell | left | cent | Fargo K |
| none | none | 1,100 | 15¼ | Rayfield | spl-press | dry-d | prog | unit-m | 3 | 7.75 –1 | int-gear | springs | springs | ½-ell | ½-ell | left | cent | Fargo N |
| cent | motor | 1,190 | 15 | Stromberg | circ-spl | cone | selec | amid | 3 | 8.50 –1 | top worm | springs | rad-rd | ½-ell | ½-ell | left | cent | Federal M |
| cent | motor | 1,160 | 12 | Stromberg | circ-spl | dry-d | selec | unit-m | 3 | 10.33 –1 | top worm | springs | rad-rd | ½-ell | ½-ell | right | cent | Federal L |
| l-b | motor | 1,000 | 16 | Stromberg | pressure | wet-d | ind-c | amid | 3 | 9.75 –1 | bevel-4 | springs | springs | ½-ell | plat | right | right | F.W.D G |
| l-b | motor | 1,100 | 13 | Stromberg | spl-press | wet-d | selec | amid | 3 | 9.00 –1 | bevel-4 | springs | springs | ½-ell | plat | right | right | F.W.D B |
| l-b | motor | 1,000 | 9½ | Stromberg | pressure | wet-d | selec | amid | 3 | 12.00 –1 | bevel-4 | springs | springs | ½-ell | plat | right | right | F.W.D M |
| none | none | 1,200 | 28 | Rayfield | circ-spl | cone | selec | amid | 3 | 4.25 –1 | bevel | tor-arm | springs | ½-ell | ½-ell | left | cent | Gabriel H |
| none | none | 1,200 | 21 | Rayfield | circ-spl | cone | selec | amid | 4 | 5.50 –1 | top worm | springs | springs | ½-ell | ½-ell | left | cent | Gabriel O |
| none | none | 1,200 | 16½ | Rayfield | circ-spl | cone | selec | amid | 4 | 7.25 –1 | top worm | springs | springs | ½-ell | ½-ell | left | cent | Gabriel M |
| suct | motor | 1,150 | 18⅔ | Rayfield | circ-spl | dry-d | selec | unit-j | 3 | 6.62 –1 | dbl chn | ..... | rad-rd | ½-ell | ½-ell | right | cent | Garford 64 |
| suct | motor | 1,000 | 17 | Rayfield | circ-spl | dry-d | selec | unit-m | 3 | 6.50 –1 | top worm | springs | springs | ½-ell | ½-ell | right | cent | Garford 75 |
| suct | motor | 1,000 | 13⅞ | Rayfield | circ-spl | dry-d | selec | amid | 3 | 7.75 –1 | top worm | springs | springs | ½-ell | ½-ell | right | ..... | Garford 66 |
| suct | motor | 1,000 | 13⅚ | Rayfield | circ-spl | dry-d | selec | amid | 3 | 7.75 –1 | top worm | springs | springs | ½-ell | ½-ell | right | ..... | Garford 70 |
| suct | motor | 1,000 | 8 | Rayfield | pressure | wet-d | selec | unit-j | 4 | 13.31–1 | dbl chn | ..... | rad-rd | ½-ell | ½-ell | right | right | Garford D |
| ..... | ..... | 1,000 | 8 | Rayfield | pressure | dry-d | selec | unit-j | 4 | 13.31–1 | dbl chn | ..... | rad-rd | ½-ell | ½-ell | right | right | Garford F |
| l-b | motor | 1,000 | 15 | Schebler | spl-press | cone | selec | amid | 3 | 7.75 –1 | top worm | tor-arm | rad-rd | ½-ell | plat | left | ..... | G. A. Schacht |
| l-b | motor | 1,000 | 15 | Schebler | spl-press | cone | selec | amid | 3 | 9.66 –1 | top worm | tor-t | rad-rd | ½-ell | plat | left | ..... | G. A. Schacht |
| ..... | ..... | 1,150 | 14 | Stromberg | spl-press | dry-d | selec | unit-m | 4 | 8.66 –1 | top worm | springs | springs | ½-ell | ½-ell | left | ..... | Gersix C |
| suct | motor | 1,150 | 20 | Marvel | circ-spl | cone | selec | amid | 3 | 6.00 –1 | bevel | tor-t | tor-t | ½-ell | ellip | left | cent | G.M.C 15 |
| suct | motor | 1,300 | 16 | Marvel | circ-spl | dry-d | selec | unit-m | 4 | 8.66 –1 | dbl chn | ..... | rad-rd | ½-ell | ½ ell | left | cent | G.M.C 25 |
| suct | motor | 1,300 | 16 | Marvel | circ-spl | dry-d | selec | unit-m | 4 | 8.75 –1 | top worm | springs | rad-rd | ½-ell | ½-ell | left | cent | G.M.C 26 |
| suct | motor | 1,300 | 15 | Marvel | circ-spl | dry-d | selec | unit-m | 4 | 9.25 –1 | top worm | springs | rad-rd | ½-ell | ½-ell | left | cent | G.M.C 31 |
| suct | motor | 1,200 | 14 | Marvel | spl-press | dry-d | selec | unit-m | 4 | 9.06 –1 | dbl chn | ..... | rad-rd | ½-ell | ½-ell | left | cent | G.M.C 40 |
| suct | motor | 1,200 | 14 | Marvel | spl-press | dry-d | selec | unit-m | 4 | 9.25 –1 | top worm | springs | rad-rd | ½-ell | ½-ell | left | cent | G.M.C 41 |
| suct | motor | 1,100 | 12 | Marvel | spl-press | dry-d | selec | amid | 4 | 10.90 –1 | dbl chn | ..... | rad-rd | ½-ell | ½-ell | left | cent | G.M.C 70 |
| suct | motor | 1,210 | 12 | Marvel | spl-press | dry-d | selec | amid | 4 | 12.00 –1 | top worm | springs | rad-rd | ½-ell | ½-ell | left | cent | G.M.C 71 |
| suct | motor | 1,160 | 9¾ | Marvel | spl-press | dry-d | selec | amid | 4 | 13.84 –1 | dbl chn | ..... | rad-rd | ½-ell | ½-ell | left | cent | G.M.C 100 |
| suct | motor | 1,150 | 10 | Marvel | spl-press | dry-d | selec | amid | 4 | 13.66 –1 | top worm | ..... | rad-rd | ½-ell | ½-ell | left | cent | G.M.C 101 |
| ..... | ..... | ..... | 18 | Schebler | spl-press | dry-p | plan | unit-j | 2 | ..... | dbl chn | ..... | rad-rd | ½-ell | ellip | right | right | Geneva 1 |
| cent | motor | 1,100 | 20 | Zenith | circ-spl | dry-d | ind-c | amid | 3 | 6.50 –1 | top worm | springs | springs | ½-ell | ½-ell | left | ..... | Gramm-Bernstein |
| cent | motor | 1,100 | 17 | Zenith | circ-spl | dry-d | ind-c | amid | 3 | 7.75 –1 | top worm | springs | springs | ½-ell | ½-ell | left | ..... | Gramm-Bernstein |
| cent | motor | 1,100 | 15 | Zenith | circ-spl | dry-d | ind-c | amid | 3 | 8.60 –1 | top worm | springs | springs | ½-ell | ½-ell | left | ..... | Gramm-Bernstein |
| cent | motor | 1,100 | 12 | Zenith | circ-spl | dry-d | ind-c | amid | 4 | 11.75 –1 | top worm | springs | springs | ½-ell | ½-ell | left | ..... | Gramm-Bernstein |
| cent | motor | 1,100 | 10 | Zenith | circ-spl | dry-d | ind-c | amid | 4 | 13.00 –1 | top worm | springs | springs | ½-ell | ½-ell | left | ..... | Gramm-Bernstein |

**ABBREVIATIONS:** (continued). **Governor Type,** cent, *centrifugal;* l-b, *loose-ball;* suct, *suction;* hyd, *hydraulic;* elec, *electric.* **Governor Drive,** motor, *from motor;* d-shaft, *from driving shaft;* f-wheel, *from front wheel;* duplex, *from both the motor and driving shaft by overrunning clutches.* **Lubrication,** splash, *non-circulating or simple splash;* circ-spl, *circulating splash;* spl-press, *splash-pressure;* fuel-inj, *fuel injection, oil mixed with fuel;* pressure, *pressure feed, no splash.* **Clutch Type,** dry-p, *dry plate;* dry-d, *dry multiple disk;* wet-d, *wet disk or disk-in-oil;* wet-p, *wet plate or plate-in-oil;* r-cone, *reversed cone or inverted cone;* cont-b, *contracting band;* exp-s, *expanding shoe.* **Gearset Type,** prog, *progressive sliding gear;* selec, *selective sliding gear;* plan, *planetary;* ind-c, *constant-mesh, individual-clutch;* fric, *friction;* elec, *electric.* **Gearset Location,** amid, *amidships;* unit-m, *unit with motor;* unit-j, *unit with jackshaft;* unit-x, *unit with axle.* **Gearset Speeds,** inf, *infinite number.* **Final Drive,** int-g, int-gear, *internal-gear;* sing chn, *single chain;* dbl chn, *double chain;* doub-red, *double reduction;* spur-g, *spur gears;* sp-bev, *spiral bevel;* f, *front wheel or wheels;* 4, *four-wheel driven.* **Torque Taken By,** rad-rd, *radius rods;* tor-arm, *torque arm;* tor-t, *torsion tube;* sub-f, *sub-frame.* **Propulsion Taken By,** rad-rd, *radius rod;* tor-t, *torsion tube;* tor-arm, *torque arm;* sub-f, *sub-frame.* **Springs,** ellip, *elliptic;* ½-ell, *half elliptic;* ¼-ell, *quarter elliptic;* ¾-ell, *three-quarter elliptic;* plat, *platform;* cant, *cantilever.* **Control Levers,** cent, *center;* c & r, *gearshift center, brake right;* c & l, *gearshift center, brake left.*

| Name and Model | Capacity in Pounds | Price of Chassis | Wheelbase in Inches | TIRES | | | MOTOR | | | | | | | COOLING | | IGNITION | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Kind | SIZES IN INCHES | | Location | No. of Cylinders | No. of Crankshaft Bearings | Bore and Stroke | N.A.C.C. Hp. | Cylinders Cast | Valves Placed | Water Circulation | Radiator Core and Case | Type | Make | Spark Advance |
| | | | | | Front | Rear | | | | | | | | | | | | |
| G.V. Mercedes....FV | 12,000 | ..... | 169 | solid.... | 34x5 | 40x6 | under hood.. | 4 | 4 | 4½x5 9/10 | 29.00 | pairs... | head... | cent.... | cell-sheet... | sing.... | Bosch..... | fixed... |
| Hall..... | 7,000 | 2,800 | 144* | solid.... | 36x5 | 36x5d | under hood.. | 4 | 5 | 4½x5½ | 32.40 | pairs... | left.... | cent.... | fin-cast..... | sing.... | Bosch*..... | auto... |
| Hall..... | 7,000 | 2,800 | 144* | solid.... | 36x5 | 40x5d | under hood.. | 4 | 5 | 4½x5½ | 32.40 | pairs... | left.... | cent.... | fin-cast..... | sing.... | Bosch*..... | auto... |
| Hall..... | 10,000 | 3,400 | 144* | solid.... | 36x5 | 40x6d | under hood.. | 4 | 5 | 4½x5½ | 32.40 | pairs... | left.... | cent.... | fin-cast..... | sing.... | Bosch*..... | auto... |
| Hanger.....B | 1,000 | 875 | 110* | pneu.... | 32x4 | 32x4 | under hood.. | 4 | 2 | 3½x5 | 16 92 | block... | left.... | thermo.. | cell-sheet... | sing.... | K.-W..... | hand... |
| Harvey.....WH | 7,000 | 2,700 | 168* | solid.... | 36x5 | 36x5d | under hood.. | 4 | 3 | 4½x5½ | 29.00 | block... | right... | cent.... | sq-t-sheet... | sing.... | Eisemann.... | auto... |
| Harvey.....WK | 10,000 | 3,400 | 168* | solid.... | 36x5 | 40x6d | under hood.. | 4 | 3 | 4½x6 | 32.40 | block... | right... | cent.... | sq-t-sheet... | dual... | Eisemann.... | auto... |
| Henderson.....C | 1,200 | 1,100 | 106* | pneu.... | 34x4 | 34x4 | under hood.. | 4 | 3 | 3½x5 | 19.61 | block... | left.... | thermo.. | fin-sheet.... | sing.... | Bosch..... | fixed... |
| Henderson.....D | 2,000 | 1,500 | 124* | pneu*... | 35x5* | 35x5* | under hood.. | 4 | 3 | 3½x5 | 22.50 | block... | right... | thermo.. | fin-sheet.... | sing.... | Bosch..... | fixed... |
| Hoadley..... | 4,000 | 3,000 | 145 | solid.... | 36x4 | 36x4 | under hood.. | 4 | ..... | 4½x5½ | 27.20 | block... | left.... | cent.... | fin-sheet.... | dual... | Remy..... | hand... |
| Horner.....F-G | 3,000 | ..... | 145* | solid.... | 36x4 | 36x5 | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | left.... | cent.... | fin-cast..... | dual... | Bosch..... | hand... |
| Horner.....F-G | 4,000 | ..... | 145* | solid.... | 36x4 | 36x5 | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | left.... | cent.... | fin-cast..... | dual... | Bosch..... | hand... |
| Horner.....F-G | 6,000 | ..... | 145* | solid.... | 36x5 | 40x4d | under hood.. | 4 | 3 | 4½x5½ | 32.40 | pairs... | left.... | cent.... | fin-cast..... | dual... | Bosch..... | hand... |
| Horner.....F | 10,000 | ..... | 156* | solid.... | 38x6 | 42x6d | under hood.. | 4 | 3 | 5½x5½ | 44.20 | pairs... | opp.... | cent.... | fin-cast..... | dual... | Bosch..... | hand... |
| Hannibal.....A | 1,000 | 550 | 106 | pneu.... | 30x3½ | 30x3½ | under hood.. | 4 | ..... | 3½x4½ | 16.92 | block... | ..... | thermo.. | cell-sheet... | sing.... | Atw. Kent.... | ..... |
| I.H.C.....MA | 1,000 | 600-c | 90 | solid*... | 42x2* | 42x2* | under body.. | 2 | 2 | 5 x5 | 20.00 | sing.... | head... | air..... | none..... | dual... | Heinze..... | hand... |
| I.H.C.....MW | 1,000 | 710-c | 90 | solid*... | 36x2* | 36x2* | under body.. | 2 | 2 | 4½x5 | 16.20 | sing.... | top.... | cent.... | fin-sheet.... | dual... | Heinze..... | hand... |
| I.H.C.....E | 1,500 | 950-c | 102 | solid*... | 40x2½* | 40x3* | under body.. | 2 | 2 | 4½x5 | 16.20 | sing.... | top.... | cent.... | fin-sheet.... | sing.... | Bosch..... | hand... |
| I.H.C.....F | 2,000 | 1,500 | 128 | solid*... | 37x3½* | 37x4* | under hood.. | 4 | 3 | 3½x5½ | 19.61 | block... | right... | cent.... | fin-sheet.... | sing.... | Bosch..... | hand... |
| Independent.....F | 1,500 | 1,285 | 128* | solid*... | 36x3* | 36x3½* | under hood.. | 4 | 3 | 3½x5 | 19.61 | block... | right... | thermo.. | z-z-t-sheet.. | sing.... | Eisemann.... | fixed... |
| Independent.....G | 4,000 | 1,800 | 144 | solid.... | 36x3½ | 36x5 | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | right... | thermo.. | cell-cast.... | sing.... | Eisemann.... | fixed... |
| Indiana.....S | 2,000 | ..... | 128 | solid*... | 36x3½ | 36x4 | under hood.. | 4 | 3 | 3½x5 | 19.61 | block... | right... | cent.... | fin-cast..... | sing.... | Bosch..... | fixed... |
| Indiana.....D | 3,000 | ..... | 135 | solid.... | ..... | ..... | under hood.. | 4 | 3 | 4½x5½ | 27.20 | pairs... | right... | cent.... | fin-cast..... | sing.... | Bosch..... | hand... |
| Indiana.....R | 6,000 | ..... | 156 | solid.... | 36x5 | 36x5d | under hood.. | 4 | 3 | 4½x5½ | 27.20 | pairs... | right... | cent.... | fin-cast..... | sing.... | Bosch..... | hand... |
| Indiana.....L | 10,000 | ..... | 163 | solid.... | ..... | 40x-d | under hood.. | 4 | ..... | 4½x5½ | 36.15 | pairs... | opp.... | cent.... | fin-cast..... | sing.... | Bosch..... | hand... |
| Jeffery.....4015 | 4,000 | 2,750 | 124 | solid.... | 36x5 | 36x5 | btw seats... | 4 | 3 | 3½x5½ | 22.50 | block... | right... | cent.... | cell-sheet... | dual... | Bosch..... | hand... |
| Kearns.....L | 500 | 375 | 90 | pneu.... | 28x3 | 28x3 | under hood.. | 4 | 2 | 2½x4 | 12.08 | block... | right... | thermo.. | fin-sheet.... | sing.... | Atw. Kent.... | auto... |
| Kearns.....D | 1,000 | 600 | 107 | pneu.... | 30x3½ | 30x3½ | under hood.. | 4 | 2 | 3½x5 | 16.92 | block... | right... | thermo.. | fin-sheet.... | sing.... | Dixie..... | hand... |
| Kelly-Springfield..K-30 | 2,000 | 2,000 | 120 | solid*... | 36x3½* | 36x5* | under hood.. | 4 | 3 | 3½x5½ | 22.50 | block... | left.... | cent.... | cell-sheet... | sing.... | Eisemann.... | auto... |
| Kelly-Springfield..K-31 | 3,000 | 2,050 | 144* | solid.... | 36x3½ | 36x3d | under hood.. | 4 | 3 | 3½x5½ | 22.50 | block... | left.... | cent.... | cell-sheet... | sing.... | Eisemann.... | auto... |
| Kelly-Springfield..K-35 | 4,000 | 2,750 | 144* | solid.... | 36x4 | 36x4d | under hood.. | 4 | 3 | 3½x5½ | 22.50 | block... | left.... | cent.... | cell-sheet... | sing.... | Eisemann.... | auto... |
| Kelly-Springfield..K-40 | 6,000 | 3,400 | 150* | solid.... | 36x5 | 40x5d | under hood.. | 4 | 3 | 4½x6½ | 32.40 | pairs... | opp.... | gear.... | cell-sheet... | sing.... | Eisemann.... | auto... |
| Kelly-Springfield..K-45 | 8,000 | 3,600 | 150* | solid.... | 36x5 | 40x5d | under hood.. | 4 | 3 | 4½x6½ | 32.40 | pairs... | opp.... | cent.... | cell-sheet... | sing.... | Eisemann.... | auto... |
| Kelly-Springfield..K-50 | 10,000 | 4,250 | 150* | solid.... | 36x6 | 40x6d | under hood.. | 4 | 3 | 4½x6½ | 32.40 | pairs... | opp.... | cent.... | cell-sheet... | sing.... | Eisemann.... | auto... |
| Kelly-Springfield..K-60 | 12,000 | 4,500 | 150* | solid.... | 36x6 | 40x7d | under hood.. | 4 | 3 | 4½x6½ | 32.40 | pairs... | opp.... | cent.... | cell-sheet... | sing.... | Eisemann.... | auto... |
| King..... | 7,000 | 2,600 | 120 | solid.... | 36x5 | 36x5d | under flr.... | 4 | 3 | 4½x5½ | 32.40 | pairs... | left.... | cent.... | z-z-t-sheet.. | dual... | Bosch..... | 2-pt.... |
| Kisselkar..... | 1,000 | 950 | 115 | pneu.... | 32x4 | 32x4 | under hood.. | 4 | 3 | 3½x5½ | 24.22 | block... | right... | cent.... | sq-t-sheet.. | sing.... | Eisemann.... | hand... |
| Kisselkar..... | 2,000 | 1,500 | 125 | pneu*... | 35x4½* | 35x4½* | under hood.. | 4 | 3 | 3½x5½ | 24.22 | block... | right... | cent.... | sq-t-sheet.. | sing.... | Eisemann.... | hand... |
| Kisselkar..... | 4,000 | 2,100 | 144 | solid.... | 34x3½ | 36x6 | under hood.. | 4 | 3 | 4½x5½ | 29.00 | block... | right... | cent.... | sq-t-sheet.. | sing.... | Eisemann.... | hand... |
| Kisselkar..... | 6,000 | 2,750 | 144 | solid.... | 36x4 | 38x4 | under hood.. | 4 | 3 | 4½x5½ | 32.40 | pairs... | left.... | cent.... | sq-t-sheet.. | sing.... | Eisemann.... | hand... |
| Kisselkar..... | 8,000 | 3,350 | 162 | solid.... | 36x5 | 40x5d | under hood.. | 4 | 3 | 4¾x5 | 38.25 | pairs... | left.... | cent.... | sq-t-sheet.. | sing.... | Eisemann.... | hand... |
| Kisselkar..... | 12,000 | 4,350 | 168 | solid.... | 36x6 | 40x6d | under hood.. | 4 | 3 | 4¾x5 | 38.25 | pairs... | left.... | cent.... | sq-t-sheet.. | sing.... | Eisemann.... | hand... |
| Kleiber.....1 | 3,000 | 2,250 | 140* | solid.... | 36x3½ | 36x5 | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | left.... | cent.... | z-z-t-sheet.. | dual... | Bosch..... | hand... |
| Kleiber.....2 | 5,000 | 2,750 | 150* | solid.... | 36x4 | 36x4d | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | left.... | cent.... | z-z-t-sheet.. | dual... | Bosch..... | hand... |
| Kleiber.....3 | 7,000 | 3,300 | 160* | solid.... | 36x5 | 36x5d | under hood.. | 4 | 3 | 4½x5½ | 32.40 | pairs... | left.... | cent.... | z-z-t-sheet.. | dual... | Bosch..... | hand... |
| Kleiber.....5 | 10,000 | 4,250 | 170* | solid.... | 36x6 | 40x6d | under hood.. | 4 | 3 | 5½x5¾ | 44.20 | pairs... | opp.... | cent.... | z-z-t-sheet.. | dual... | Bosch..... | hand... |
| Knickerbocker.....16 | 4,000 | 2,200 | 148* | solid.... | 36x4 | 36x4d | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | left.... | cent.... | fin-cast..... | sing.... | Bosch..... | hand... |
| Knickerbocker.....16 | 7,000 | 2,850 | 164* | solid.... | 36x5 | 36x5d | under hood.. | 4 | 3 | 4¾x5 | 32.40 | pairs... | left.... | cent.... | fin-cast..... | sing.... | Bosch..... | hand... |
| Knox Tractor.....35 | ..... | 4,500 | 108 | solid.... | 36x4 | 38x6d | under hood.. | 4 | 3 | 5 x5½ | 40.00 | pairs.. | head... | cent.... | sq-t-sheet.. | sing.... | Mea*..... | hand... |
| Koehler.....K | 2,000 | 870 | 129 | solid.... | 34x3 | 34x3½ | under hood.. | 4 | 3 | 3½x5 | 19.61 | block... | head... | thermo.. | fin-cast..... | sing.... | opt..... | hand... |
| Kosmath.....15 | 1,000 | 675 | 100 | pneu.... | 32x3½ | 31x4 | under hood.. | 4 | 2 | 3½x4½ | 15.65 | block... | right... | thermo.. | fin-sheet.... | sing.... | Atw. Kent*... | auto*.. |
| Krebs.....F | 1,500 | 1,600 | 120 | pneu.... | 34x4½ | 34x4½ | under hood.. | 4 | 5 | 3½x5 | 22.50 | block... | right... | thermo.. | fin-sheet.... | sing.... | Bosch..... | auto... |
| Krebs.....G | 2,000 | 2,000 | 144* | solid.... | 34x3½ | 34x4 | under hood.. | 4 | 5 | 3½x5½ | 22.50 | block... | left.... | cent.... | fin-sheet.... | sing.... | Bosch..... | auto... |
| Krebs.....H | 4,000 | 2,450 | 144* | solid.... | 36x4 | 36x6 | under hood.. | 4 | 5 | 4½x5½ | 27.20 | block... | left.... | cent.... | fin-sheet.... | sing.... | Bosch..... | auto... |
| Krebs.....I | 6,000 | 3,100 | 162* | solid.... | 36x5 | 36x5d | under hood.. | 4 | 5 | 4½x5½ | 27.20 | block... | left.... | cent.... | fin-sheet.... | sing.... | Bosch..... | auto... |
| Lambert.....V1 | 1,000 | 900 | 106* | pneu.... | 30x3½ | 31x4 | under hood.. | 4 | 3 | 3½x4½ | 19.61 | pairs... | left.... | cent.... | fin-sheet.... | dual... | Bosch..... | hand... |
| Lambert.....V3 | 2,000 | 1,800 | 120 | solid.... | 36x3½ | 36x4 | under hood.. | 4 | 3 | 4½x5 | 32.40 | block... | left.... | cent.... | fin-sheet.... | dual... | ..... | hand... |
| Lambert.....V5 | 4,000 | 2,000 | 120 | solid.... | 36x4 | 36x5 | under hood.. | 4 | 3 | 4½x5 | 32.40 | block... | left.... | cent.... | fin-sheet.... | dual... | ..... | hand... |
| Landshaft.....GI | 2,000 | 1,250 | 124* | solid.... | 34x3½ | 36x4 | under hood.. | 4 | 3 | 3½x5½ | 19.61 | block... | right... | thermo.. | sq-t-sheet.. | sing.... | Swiss..... | hand... |
| Landshaft.....JI | 4,000 | 1,550 | 144* | solid.... | 34x4 | 36x4 | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | right... | cent.... | sq-t-sheet.. | sing.... | Swiss..... | hand... |
| Lange.....C | 2,000 | 1,750 | 130* | solid.... | 36x3½ | 38x4 | under hood.. | 4 | 3 | 3¾x5½ | 22.50 | block... | left.... | thermo.. | cell-sheet... | sing.... | Eisemann.... | hand... |
| Lange.....B | 4,000 | 2,350 | 136* | solid.... | 36x4 | 38x6 | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | left.... | thermo.. | cell-sheet... | sing.... | Eisemann.... | hand... |
| Larrabee..... | 3,000 | 1,950 | 132 | solid.... | 36x3½ | 36x5 | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | left.... | cent.... | fin-cast..... | sing.... | Bosch..... | hand... |
| Larrabee..... | 5,000 | 2,200 | 140* | solid.... | 36x4 | 36x6* | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | left.... | cent.... | fin-cast..... | sing.... | Bosch..... | hand... |
| Lippard-Stewart.....M | 1,000 | 1,000 | 106 | pneu.... | 33x4 | 33x4 | under hood.. | 4 | 2 | 3 x5 | 14.40 | block... | right... | thermo.. | fin-sheet.... | sing.... | Atw. Kent.... | auto... |
| Lippard-Stewart.....W | 1,500 | 1,600 | 125* | pneu*... | 35x4½* | 35x4½* | under hood.. | 4 | 3 | 3¾x5½ | 22.50 | block... | left.... | cent.... | fin-sheet.... | sing.... | Eisemann.... | fixed... |
| Lippard-Stewart.....H | 2,000 | 2,000 | 145 | solid.... | 36x3 | 36x5 | under hood.. | 4 | 3 | 3¾x5½ | 22.50 | block... | left.... | cent.... | z-z-t-cast... | sing.... | Eisemann.... | fixed... |
| Lippard-Stewart.....F | 3,000 | 2,300 | 145 | solid.... | 36x3½ | 36x3d | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | left.... | cent.... | z-z-t-cast... | sing.... | Eisemann.... | fixed... |
| Lippard-Stewart.....G | 4,000 | 2,600 | 158 | solid.... | 36x4 | 36x4d | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | left.... | cent.... | z-z-t-cast... | sing.... | Eisemann.... | fixed... |

**ABBREVIATIONS: General,** *, *with other options;* opt, *optional.* **Price,** -c, *complete with body.* **Tires, Kind,** Pneu, *pneumatic;* Cush, *cushion;* p & s, *pneumatic in front and solid in rear;* s & st, *solid in front and steel in rear.* **Tire Sizes,** d, *dual.* **Motor Location,** btw seats, *between seats;* under flr, *under floor.* **Cylinders Cast,** sing, *singly or individually.* **Location of Valves,** opp, *opposite or T-head type;* top (two-cylinder motors only), *L-head cylinder laid horizontal with valves up;* r & h, *at right and in head, L-head cylinder;* l & h, *at left and in head, L-head cylinder;* 2-cyc, *two-cycle motor, no valves.* **Water Circulation,** cent, *centrifugal pump;* gear, *gear pump;* thermo, *thermo-syphon circulation;* air, *air-cooled, no water.* **Radiator Type and Case,** fin-sheet, *finned-tube core with sheet metal casing;* fin-cast, *finned-tube core with cast aluminum casing;* sq-t-sheet, *square tube or flat tube core with sheet metal casing;* sq-t-cast, *square tube core with cast aluminum casing;* cell-sheet, *cellular or honeycomb core with sheet metal casing;* cell-cast, *cellular core with cast aluminum casing;* z-z-t-sheet, *zig-zag tube core with sheet metal casing;* z-z-t-cast, *zig-zag tube core with cast aluminum casing;* ring-cast, *copper tube core arranged in a ring about a centrifugal fan with a cast aluminum casing.* **Ignition, Type,** sing, *single;* doub, *double.* **Make of Magneto** (or other sparking device), Atw. Kent, *Atwater Kent.* **Spark Advance,** auto, *automatic;* auto-h, *automatic advance with hand adjustment;* 2-pt, *two-point fixed, battery circuit fixed in retard, magneto in advance.*

| MOTOR | | | | | | TRANSMISSION | | | | | | | | SPRINGS | | CONTROL | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GOVERNOR | | SPEED | | | | | GEARSET | | | | | | | | | | | |
| Type | Drive | Motor in r.p.m. | Truck in m.p.h. | Carbureter Make | Lubrication | Clutch Type | Type | Location | Speeds | Total Gear Reduction in High | Final Drive | Torque Taken By | Propulsion Taken By | Front | Rear | Steer | Levers | Name and Model |
| cent... | motor... | 850 | 11 | G.V..... | spl-press.. | r-cone... | selec... | amid..... | 4 | 9.36 –1 | int-gear..... | tor-arm.. | rad-rd.... | ½-ell... | ½-ell... | right... | right... | G.V. Mercedes.....FV |
| suct.... | motor... | 1,150 | 15 | Zenith..... | circ-spl... | dry-d... | prog... | unit-m.... | 4 | ..... | dbl chn..... | ..... | rad-rd.... | ½-ell... | ½-ell... | left*... | cent... | Hall..... |
| suct.... | motor... | 1,150 | 15 | Zenith..... | circ-spl... | dry-d... | prog... | unit-m.... | 4 | ..... | top worm.... | springs... | springs... | ½-ell... | ½-ell... | left*... | cent... | Hall..... |
| suct.... | motor... | 1,150 | 12 | Zenith..... | circ-spl... | dry-d... | prog... | unit-m.... | 4 | ..... | dbl chn..... | ..... | rad-rd.... | ½-ell... | ½-ell... | left*... | cent... | Hall..... |
| none... | none.... | 1,600 | 25 | Stromberg*.. | circ-spl... | cone.... | selec... | unit-m.... | 3 | 6.20 –1 | top worm.... | springs... | springs... | ½-ell... | ½-ell... | left.... | cent... | Hanger.....B |
| cent... | duplex.. | 1,000 | 13 | Holley..... | spl-press.. | cone.... | selec... | amid..... | 4 | 8.75 –1 | top worm.... | springs... | springs... | ½-ell... | ½-ell... | left.... | cent... | Harvey.....WH |
| cent... | duplex.. | 1,000 | 11 | Holley..... | spl-press.. | cone.... | selec... | amid..... | 4 | 11.75 –1 | top worm.... | springs... | springs... | ½-ell... | ½-ell... | left.... | cent... | Harvey.....WK |
| none... | none.... | 2,000 | 32 | Stromberg... | circ-spl... | dry-d... | selec... | unit-m.... | 3 | 6.25 –1 | top worm.... | springs... | springs... | ½-ell... | ½-ell... | left.... | ..... | Henderson.....C |
| none... | none.... | 2,000 | 25 | Stromberg... | circ-spl... | dry-d... | selec... | unit-m.... | 3 | 8.25 –1 | top worm.... | springs... | springs... | ½-ell... | ½-ell... | left.... | ..... | Henderson.....D |
| none... | none.... | 1,000 | 12 | Schebler..... | circ-spl... | wet-d... | selec... | unit-m.... | 3 | 4.80 –1 | dbl chn-4.... | sub-f..... | rad-rd.... | ½-ell... | ½-ell... | left.... | cent... | Hoadley..... |
| cent... | motor... | 1,200 | 16½ | Stromberg... | spl-press.. | dry-d... | selec... | amid..... | 3 | 7.79 –1 | top worm*... | springs... | rad-rd.... | ½-ell... | plat... | left.... | cent... | Horner.....F-G |
| cent... | motor... | 1,200 | 13½ | Stromberg... | spl-press.. | dry-d... | selec... | amid..... | 3 | 9.43 –1 | top worm*... | springs... | rad-rd.... | ½-ell... | plat... | left.... | cent... | Horner.....F-G |
| cent... | motor... | 1,100 | 14 | Stromberg... | spl-press.. | dry-d... | selec... | amid..... | 3 | 9.40 –1 | top worm*... | springs... | rad-rd.... | ½-ell... | plat... | left.... | cent... | Horner.....F-G |
| cent... | motor... | 1,000 | 9½ | Stromberg... | spl-press.. | dry-d... | selec... | amid..... | 3 | 13.42 –1 | dbl chn..... | ..... | rad-rd.... | ½-ell... | plat... | left.... | cent... | Horner.....F |
| none... | none.... | ..... | ..... | Zenith..... | spl-press.. | ..... | selec... | unit-m.... | 3 | ..... | ..... | ..... | ..... | ellip... | cant*.. | ..... | ..... | Hannibal.....A |
| none... | none.... | ..... | ..... | Schebler..... | splash.... | cont-b... | ind-c... | amid..... | 2 | 9.10 –1 | dbl chn..... | ..... | rad-rd.... | ellip... | ellip... | right... | right... | I.H.C.....MA |
| cent... | motor... | 1,300 | 18 | Holley..... | spl-press.. | cont-b... | ind-c... | amid..... | 2 | 9.10 –1 | dbl chn..... | ..... | rad-rd.... | ellip... | ellip... | right... | right... | I.H.C.....MW |
| cent... | motor... | 1,300 | 17½ | Holley..... | spl-press.. | cont-b... | ind-c... | amid..... | 2 | 9.10 –1 | dbl chn..... | ..... | rad-rd.... | ½-ell... | ellip... | right... | right... | I.H.C.....E |
| cent... | motor... | 1,350 | 17 | Holley..... | spl-press.. | cone.... | selec... | amid..... | 3 | 8.00 –1 | int-gear..... | springs... | springs... | ½-ell... | plat... | left.... | cent... | I.H.C.....F |
| suct.... | motor... | 1,350 | 18 | Marvel..... | circ-spl... | dry-d... | selec... | unit-m.... | 3 | 7.75 –1 | top worm.... | springs... | springs... | ½-ell... | ½-ell... | left.... | cent... | Independent.....F |
| suct.... | motor... | 1,200 | 15 | Marvel..... | circ-spl... | dry-d... | selec... | unit-m.... | 3 | 8.66 –1 | top worm.... | springs... | springs... | ½-ell... | ½-ell... | left.... | cent... | Independent.....G |
| cent... | motor... | 1,400 | 20 | Schebler..... | spl-press.. | dry-p... | selec... | unit-m.... | 3 | 7.75 –1 | top worm.... | springs... | springs... | ½-ell... | ½-ell... | left.... | cent... | Indiana.....S |
| cent... | motor... | 1,200 | 17 | Schebler..... | spl-press.. | dry-p... | selec... | amid..... | 3 | 7.70 –1 | top worm.... | ..... | rad-rd.... | ½-ell... | ½-ell... | left.... | cent... | Indiana.....D |
| cent... | motor... | 1,200 | 14½ | Schebler..... | spl-press.. | dry-p... | selec... | amid..... | 3 | 8.70 –1 | top worm.... | ..... | rad-rd.... | ½-ell... | ½-ell... | left.... | cent... | Indiana.....R |
| cent... | motor... | 1,200 | 12 | Schebler..... | spl-press.. | dry-p... | selec... | amid..... | 3 | 11.75 –1 | top worm.... | ..... | rad-rd.... | ½-ell... | ½-ell... | left.... | ..... | Indiana.....L |
| cent... | duplex.. | 1,112 | 14 | Stromberg... | spl-press.. | dry-p... | ind-c... | amid..... | 4 | 8.50 –1 | int-g-4..... | springs... | springs... | ½-ell... | ½-ell... | left.... | cent... | Jeffery.....4015 |
| none... | none.... | ..... | ..... | Holley..... | circ-spl... | cone.... | selec... | unit-m.... | 3 | 4.37 –1 | bevel..... | springs... | springs... | ½-ell... | ½-ell... | right... | cent... | Kearns.....L |
| none... | none.... | 1,600 | 40 | Marvel..... | circ-spl... | cone.... | selec... | unit-m.... | 3 | 4.37 –1 | bevel..... | tor-t..... | tor-t..... | ½-ell... | ¾-ell... | right... | cent... | Kearns.....D |
| l-b..... | motor... | 1,200 | 15 | Rayfield..... | pressure.. | cone.... | selec... | unit-j..... | 3 | 8.60 –1 | dbl chn..... | ..... | rad-rd.... | ½-ell... | ½-ell... | left.... | cent... | Kelly–Springfield...K–30 |
| l-b..... | motor... | 1,200 | 14 | Rayfield..... | pressure.. | cone.... | selec... | unit-j..... | 3 | 8.60 –1 | dbl chn..... | ..... | rad-rd.... | ½-ell... | ½-ell... | left.... | cent... | Kelly–Springfield...K–31 |
| l-b..... | motor... | 1,200 | 11½ | Rayfield..... | pressure.. | cone.... | selec... | unit-j..... | 3 | 11.30 –1 | dbl chn..... | ..... | rad-rd.... | ½-ell... | ½-ell... | left.... | cent... | Kelly–Springfield...K–35 |
| l-b..... | motor... | 900 | 9 | Rayfield..... | pressure.. | cone.... | selec... | unit-j..... | 3 | 11.00 –1 | dbl chn..... | ..... | rad-rd.... | ½-ell... | ½-ell... | left.... | cent... | Kelly–Springfield...K–40 |
| l-b..... | motor... | 900 | 8 | Rayfield..... | pressure.. | cone.... | selec... | unit-j..... | 3 | 12.00 –1 | dbl chn..... | ..... | rad-rd.... | ½-ell... | ½-ell... | left.... | cent... | Kelly–Springfield...K–45 |
| l-b..... | motor... | 900 | 8 | Rayfield..... | pressure.. | cone.... | selec... | unit-j..... | 3 | 12.00 –1 | dbl chn..... | ..... | rad-rd.... | ½-ell... | ½-ell... | left.... | cent... | Kelly–Springfield...K–50 |
| l-b..... | motor... | 900 | 8 | Rayfield..... | pressure.. | cone.... | selec... | unit-j..... | 3 | 13.00 –1 | dbl chn..... | ..... | rad-rd.... | ½-ell... | ½-ell... | left.... | cent... | Kelly–Springfield...K–60 |
| cent... | motor... | 1,000 | 12 | Schebler..... | spl-press.. | dry-d... | ind-c... | unit-j..... | 3 | 8.62 –1 | dbl chn..... | ..... | rad-rd.... | ½-ell... | ½-ell... | right... | right... | King..... |
| cent... | motor... | 1,160 | 22 | Stromberg... | circ-spl... | cone.... | selec... | unit-m.... | 3 | 4.58 –1 | bevel..... | springs... | springs... | ½-ell... | ½-ell... | left.... | cent... | Kisselkar..... |
| cent... | motor... | 1,120 | 17 | Stromberg... | circ-spl... | cone.... | selec... | unit-m.... | 3 | 3.92 –1 | top worm.... | springs... | springs... | ½-ell... | ½-ell... | left.... | cent... | Kisselkar..... |
| cent... | motor... | 1,295 | 15 | Stromberg... | circ-spl... | cone.... | selec... | amid..... | 4 | 7.86 –1 | top worm.... | springs... | springs... | ½-ell... | ½-ell... | left.... | cent... | Kisselkar..... |
| cent... | motor... | 1,350 | 13 | Stromberg... | circ-spl... | cone.... | selec... | unit-j..... | 4 | 9.90 –1 | dbl chn..... | ..... | rad-rd.... | ½-ell... | ½-ell... | left.... | cent... | Kisselkar..... |
| cent... | motor... | 1,118 | 10 | Stromberg... | circ-spl... | cone.... | selec... | unit-j..... | 4 | 11.10 –1 | dbl chn..... | ..... | rad-rd.... | ½-ell... | ½-ell... | left.... | cent... | Kisselkar..... |
| cent... | motor... | 1,160 | 9 | Stromberg... | circ-spl... | cone.... | selec... | unit-j..... | 4 | 12.70 –1 | dbl chn..... | ..... | rad-rd.... | ½-ell... | ½-ell... | left.... | cent... | Kisselkar..... |
| cent... | motor... | 1,100 | 18 | Schebler..... | spl-press.. | wet-d... | selec... | amid..... | 3 | 6.50 –1 | top worm.... | springs... | springs... | ½-ell... | ½-ell... | right... | cent... | Kleiber.....1 |
| cent... | motor... | 1,150 | 15 | Schebler..... | spl-press.. | wet-d... | selec... | amid..... | 3 | 8.00 –1 | top worm.... | springs... | springs... | ½-ell... | ½-ell... | right... | cent... | Kleiber.....2 |
| cent... | motor... | 1,200 | 14 | Schebler..... | spl-press.. | wet-d... | selec... | amid..... | 3 | 10.00 –1 | top worm.... | springs... | springs... | ½-ell... | ½-ell... | right... | cent... | Kleiber.....3 |
| cent... | motor... | 1,050 | 14 | Schebler..... | spl-press.. | wet-d... | selec... | amid..... | 4 | 8.75 –1 | top worm.... | springs... | springs... | ½-ell... | ½-ell... | right... | cent... | Kleiber.....5 |
| cent... | motor... | 1,000 | 15 | Stromberg... | spl-press.. | dry-d... | selec... | unit-m.... | 3 | 9.25 –1 | top worm.... | springs... | rad-rd.... | ½-ell... | ½-ell... | left.... | cent... | Knickerbocker.....16 |
| cent... | motor... | 1,000 | 12 | Stromberg... | spl-press.. | dry-d... | selec... | unit-m.... | 3 | 10.33 –1 | top worm.... | springs... | rad-rd.... | ½-ell... | ½-ell... | left.... | cent... | Knickerbocker.....16 |
| none... | none.... | 2,000 | 20 | Zenith..... | pressure.. | dry-p... | selec... | amid..... | 3 | 12.00 –1 | dbl chn..... | ..... | rad-rd.... | ½-ell... | cant.. | left.... | cent... | Knox Tractor.....35 |
| none... | none.... | 2,050 | 30 | opt..... | circ-spl... | cone.... | selec... | unit-m.... | 3 | 7.00 –1 | int-gear..... | springs... | springs... | ½-ell... | ½-ell... | left.... | cent... | Koehler.....K |
| none... | none.... | ..... | 30 | Holley*..... | spl-press.. | dry-p... | selec... | unit-m.... | 3 | ..... | bevel..... | tor-t..... | springs... | ½-ell... | ½-ell... | left*... | cent... | Kosmath.....15 |
| cent... | motor... | 1,190 | 20 | Schebler..... | circ-spl... | cone.... | selec... | amid..... | 3 | 6.00 –1 | top worm.... | springs... | springs... | ½-ell... | ½-ell... | left.... | cent... | Krebs.....F |
| cent... | motor... | 1,025 | 15 | Schebler..... | circ-spl... | cone.... | selec... | amid..... | 3 | 6.75 –1 | top worm.... | springs... | springs... | ½-ell... | ½-ell... | left.... | cent... | Krebs.....G |
| cent... | motor... | 1,100 | 15 | Schebler..... | circ-spl... | cone.... | selec... | amid..... | 4 | 7.75 –1 | top worm.... | springs... | springs... | ½-ell... | ½-ell... | left.... | cent... | Krebs.....H |
| cent... | motor... | 1,273 | 13 | Schebler..... | circ-spl... | cone.... | selec... | amid..... | 4 | 10.33 –1 | top worm.... | springs... | springs... | ½-ell... | ½-ell... | left.... | cent... | Krebs.....I |
| ..... | ..... | 1,700 | 20 | Schebler..... | circ-spl... | none.... | fric..... | ..... | inf.... | ..... | dbl chn..... | ..... | rad-rd.... | ½-ell... | ½-ell... | left.... | ..... | Lambert.....V1 |
| ..... | ..... | 1,500 | 15 | Schebler..... | circ-spl... | none.... | fric..... | ..... | inf.... | ..... | dbl chn..... | ..... | rad-rd.... | ½-ell... | ½-ell... | left.... | ..... | Lambert.....V3 |
| ..... | ..... | 1,500 | 15 | Schebler..... | circ-spl... | none.... | fric..... | ..... | inf.... | ..... | dbl chn..... | ..... | rad-rd.... | ½-ell... | ½-ell... | ..... | ..... | Lambert.....V5 |
| ..... | ..... | 1,000 | 15 | Rayfield..... | circ-spl... | dry-d... | selec... | unit-m.... | 3 | 7.00 –1 | int-gear..... | springs... | springs... | ½-ell... | ½-ell... | left.... | cent... | Landshaft.....GI |
| ..... | ..... | 900 | 12 | Rayfield..... | circ-spl... | dry-d... | selec... | unit-m.... | 3 | 7.00 –1 | int-gear..... | springs... | springs... | ½-ell... | ½-ell... | left.... | cent... | Landshaft.....JI |
| cent... | motor... | 1,250 | 15 | Stromberg... | circ-spl... | wet-d... | ind-c... | ..... | 3 | 8.00 –1 | dbl chn..... | ..... | rad-rd.... | ½-ell... | ½-ell... | left.... | cent... | Lange.....C |
| cent... | motor... | 1,250 | 15 | Stromberg... | circ-spl... | wet-d... | ind-c... | amid..... | 3 | 9.21 –1 | dbl chn..... | ..... | rad-rd.... | ½-ell... | ½-ell... | left.... | cent... | Lange.....B |
| cent... | motor... | 1,200 | 14 | Schebler..... | circ-spl... | dry-d... | selec... | unit-m.... | 3 | 8.66 –1 | top worm.... | springs... | springs... | ½-ell... | ½-ell... | left.... | cent... | Larrabee..... |
| cent... | motor... | 1,200 | 14 | Schebler..... | circ-spl... | dry-d... | selec... | unit-m.... | 3 | 8.66 –1 | top worm.... | springs... | springs... | ½-ell... | ½-ell... | left.... | cent... | Larrabee..... |
| none... | none.... | 2,000 | 25 | Zenith..... | spl-press.. | cone.... | selec... | unit-m.... | 3 | 5.80 –1 | top worm.... | springs... | springs... | ½-ell... | ½-ell... | left.... | cent... | Lippard–Stewart.....M |
| cent*... | motor... | 1,800* | 20* | Zenith..... | spl-press.. | cone.... | selec... | amid..... | 3 | 6.00 –1 | top worm*... | springs... | springs... | ½-ell... | ½-ell... | left.... | cent... | Lippard–Stewart.....W |
| cent... | motor... | 1,800 | 20 | Zenith..... | spl-press.. | cone.... | selec... | amid..... | 3 | 6.75 –1 | top worm.... | springs... | springs... | ½-ell... | ½-ell... | left.... | cent... | Lippard–Stewart.....H |
| cent... | motor... | 1,800 | 18 | Zenith..... | spl-press.. | cone.... | selec... | amid..... | 3 | 7.75 –1 | top worm.... | springs... | springs... | ½-ell... | ½-ell... | left.... | cent... | Lippard–Stewart.....F |
| cent... | motor... | 1,800 | 15 | Zenith..... | spl-press.. | cone.... | selec... | amid..... | 3 | 9.25 –1 | top worm.... | springs... | springs... | ½-ell... | ½-ell... | left.... | cent... | Lippard–Stewart.....G |

**ABBREVIATIONS:** (continued). **Governor Type,** cent, *centrifugal;* l-b, *loose-ball;* suct, *suction;* hyd, *hydraulic;* elec, *electric.* **Governor Drive,** motor, *from motor;* d-shaft, *from driving shaft;* f-wheel, *from front wheel,* duplex, *from both the motor and driving shaft by overrunning clutches.* **Lubrication,** splash, *non-circulating or simple splash;* circ-spl, *circulating splash;* spl-press, *splash pressure;* fuel-inj, *fuel injection, oil mixed with fuel;* pressure, *pressure feed, no splash.* **Clutch Type,** dry-p, *dry plate;* dry-d, *dry multiple disk;* wet-d, *wet disk or disk in oil;* wet-p, *wet plate or plate-in-oil;* r-cone, *reversed cone or inverted cone;* cont-b, *contracting band;* exp-s, *expanding shoe.* **Gearset Type,** prog, *progressive sliding gear;* selec, *selective sliding gear;* plan, *planetary;* ind-c, *constant-mesh, individual-clutch;* fric, *friction;* elec, *electric.* **Gearset Location,** amid *amidships;* unit-m, *unit with motor;* unit-j, *unit with jackshaft;* unit-x, *unit with axle.* **Gearset Speeds,** inf, *infinite number.* **Final Drive,** int-g, int-gear, *internal-gear;* sing chn, *single chain;* dbl chn, *double chain;* doub-red, *double reduction;* spur-g, *spur gears;* sp-bev, *spiral bevel;* f, *front wheel or wheels;* 4, *four-wheel driven.* **Torque Taken By,** rad-rd, *radius rods;* tor-t, *torsion tube;* tor-arm, *torque arm;* sub-f, *sub-frame.* **Propulsion Taken By,** rad-rd, *radius rod;* tor-t, *torsion tube;* tor-arm, *torque arm;* sub-f, *sub-frame.* **Springs,** ellip, *elliptic;* ½-ell, *half elliptic;* ¼-ell, *quarter elliptic;* ¾-ell, *three-quarters elliptic;* plat, *platform;* cant, *cantilever.* **Control Levers,** cent, *center;* c & r, *gearshift center, brake right;* c & l, *gearshift center, brake left.*

| Name and Model | Capacity in Pounds | Price of Chassis | Wheelbase in Inches | TIRES | | | MOTOR | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Kind | SIZES IN INCHES | | Location | No. of Cylinders | No. of Crankshaft Bearings | Bore and Stroke | N.A.C.C. Hp. | Cylinders Cast | Valves Placed | COOLING | | IGNITION | | |
| | | | | | Front | Rear | | | | | | | | Water Circulation | Radiator Core and Case | Type | Make | Spark Advance |
| Little Giant.....15 | 1,500 | 1,500 | 120 | p & s.... | 34x4½ | 34x3½ | under hood.. | 4 | 3 | 3½x4 | 19.61 | block... | right... | thermo.. | fin-sheet.... | dual... | Eisemann.... | hand |
| Little Giant.....H | 3,000 | 1,450 | 110 | solid.... | 37x3½ | 37x4 | under flr.... | 4 | 3 | 3½x5½ | 19.61 | block... | right... | thermo.. | fin-sheet.... | dual... | Eisemann.... | hand... |
| Little Giant.....16 | 4,000 | 2,500 | 144 | solid.... | 36x4 | 36x3½d | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | right... | thermo.. | fin-sheet.... | dual... | Eisemann.... | hand... |
| Lincoln .....D | 1,500 | 900 | 122 | pneu.... | 33x5 | 33x5 | under hood.. | 4 | 3 | 3½x5 | 22.50 | block... | head... | thermo.. | fin-cast..... | sing.... | Bosch..... | fixed... |
| Locomobile.....B | 6,000 | 3,500 | 150 | solid.... | 36x5 | 36x5d | under hood.. | 4 | 5 | 4½x6 | 29.00 | pairs... | opp.... | cent.... | cell-sheet... | dual... | Bosch..... | hand... |
| Locomobile.....BB | 8,000 | 3,650 | 150 | solid.... | 36x5 | 36x6d | under hood.. | 4 | 5 | 4½x6 | 29.00 | pairs... | opp.... | cent.... | cell-sheet... | dual... | Bosch..... | hand... |
| Lombard..... | 10,000 | ..... | ..... | steel.... | 40x6 | creeper.. | under hood.. | 4 | ..... | ..... | ..... | pairs... | ..... | cent.... | fin-sheet.... | dual... | ..... | hand... |
| Maccar.....K | 2,000 | 2,100 | 150* | solid.... | 36x4 | 36x5 | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | left.... | cent.... | cell-sheet... | sing.... | ..... | hand... |
| Maccar.....L | 2,000 | 2,100 | 150* | solid.... | 36x4 | 36x5 | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | left.... | cent.... | cell-sheet... | sing.... | ..... | hand... |
| Maccar.....J | 4,000 | 2,600 | 162* | solid.... | 36x4 | 36x4d | under hood.. | 4 | 3 | 4½x5½ | 32.40 | pairs... | left.... | cent.... | cell-sheet... | sing.... | opt..... | hand... |
| Maccar.....H | 4,000 | 2,600 | 162* | solid.... | 36x4 | 36x4d | under hood.. | 4 | 3 | 4½x5½ | 32.40 | pairs... | left.... | cent.... | cell-sheet... | sing.... | opt..... | hand... |
| Maccar.....O | 7,000 | 3,250 | 174* | solid.... | 36x5 | 36x5d | under hood.. | 4 | 3 | 4½x5½ | 32.40 | pairs... | left.... | cent.... | cell-sheet... | sing.... | opt..... | hand... |
| Maccar.....M | 7,000 | 3,250 | 174* | solid.... | 36x5 | 36x5d | under hood.. | 4 | 3 | 4½x5½ | 32.40 | pairs... | left.... | cent.... | cell-sheet... | sing.... | opt..... | hand... |
| Mack.....AB | 2,000 | 2,000 | 144* | solid*... | 36x4* | 36x3½d* | under hood.. | 4 | 3 | 4 x5 | 25.60 | pairs... | right... | cent.... | cell-sheet... | sing.... | Bosch..... | fixed... |
| Mack.....AB | 3,000 | 2,350 | 144* | solid*... | 36x4* | 36x3½d* | under hood.. | 4 | 3 | 4 x5 | 25.60 | pairs... | right... | cent.... | cell-sheet... | sing.... | Bosch..... | fixed... |
| Mack.....AB | 4,000 | 2,700 | 144* | solid*... | 36x4* | 36x4d* | under hood.. | 4 | 3 | 4 x5 | 25.60 | pairs... | right... | cent.... | cell-sheet... | sing.... | Bosch..... | fixed... |
| Mack.....AC | 7,000 | 3,400 | 168* | solid.... | 36x5 | 40x5d | under hood.. | 4 | 3 | 5 x6 | 40.00 | pairs... | right... | cent.... | ring-cast.... | dual... | Bosch..... | hand... |
| Mack.....AC | 11,000 | 4,000 | 168* | solid.... | 36x5 | 40x6d | under hood.. | 4 | 3 | 5 x6 | 40.00 | pairs... | right... | cent.... | ring-cast.... | dual... | Bosch..... | hand... |
| Mack.....AC | 15,000 | 4,500 | 180 | solid | 37x7 | 41x7d | under hood.. | 4 | 3 | 5 x6 | 40.00 | pairs... | right... | cent.... | ring-cast.... | dual... | Bosch..... | hand... |
| Mack Tractor.....AC | 30,000 | 4,000 | 116½ | solid.... | 36x5 | 40x6d | underhood.. | 4 | 3 | 5 x6 | 40.00 | pairs... | right... | cent.... | ring-cast.... | dual... | Bosch..... | hand... |
| Mais.....C&D | 3,000 | 2,600 | 132* | solid.... | 36x4 | 36x5 | under hood.. | 4 | 3 | 4 x5½ | 25.60 | block... | opp.... | cent.... | cell-sheet... | sing.... | Eisemann.... | auto... |
| Mais.....E&F | 4,000 | 2,800 | 145* | solid.... | 36x5 | 36x7 | under hood.. | 4 | 3 | 4 x5½ | 25.60 | block... | opp.... | cent.... | cell-sheet... | sing.... | Eisemann.... | auto... |
| Mais.....K, L&H | 6,000 | 3,300 | 132* | solid.... | 36x5 | 36x5d | under hood.. | 4 | ..... | 4¼x5½ | 29.75 | block... | opp.... | cent.... | cell-sheet... | sing.... | Eisemann.... | auto... |
| Mais.....M | 8,000 | 3,750 | 145* | solid.... | 36x6 | 36x6d | under hood.. | 4 | ..... | 4¼x5½ | 29.75 | block... | opp.... | cent.... | cell-sheet... | sing.... | Eisemann.... | auto... |
| Martin.....R | 2,000 | 2,050 | 130 | solid.... | 36x3½ | 36x4 | under hood.. | 4 | 3 | 4 x5 | 25.60 | block... | left.... | cent.... | fin-sheet.... | dual... | Bosch..... | hand... |
| Martin.....S | 4,000 | 2,150 | 121 | solid.... | 36x3½ | 40x4 | under flr.... | 4 | 3 | 4 x5 | 25.60 | block... | left.... | cent.... | fin-sheet.... | dual... | Bosch..... | hand... |
| Martin.....E | 5,000 | 2,800 | 135 | solid.... | 36x4 | 40x3½d | under flr.... | 4 | 3 | 4½x5 | 29.00 | pairs... | opp.... | cent.... | fin-sheet.... | dual... | Bosch..... | hand... |
| Martin.....L | 8,000 | 3,300 | 145 | solid.... | 36x5 | 40x4d | under flr.... | 4 | 3 | 4½x5½ | 36.15 | pairs... | opp.... | cent.... | fin-sheet.... | dual... | Bosch..... | hand... |
| Menominee.....E | 1,500 | 1,125 | 124 | solid.... | 34x3½ | 34x3½ | under hood.. | 4 | 3 | 3½x5 | 22.50 | block... | right... | thermo.. | fin-sheet.... | sing.... | Bosch..... | hand... |
| Menominee.....F | 2,500 | 1,575 | 130* | solid.... | 36x3½ | 36x5 | under hood.. | 4 | 3 | 3½x5½ | 22.50 | block... | left.... | cent.... | fin-sheet.... | sing.... | Bosch..... | hand... |
| Menominee.....D | 4,000 | 2,240 | 144 | solid.... | 36x4 | 36x6* | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | left.... | cent.... | fin-sheet.... | sing.... | Bosch..... | hand... |
| Mercury.....P | 1,000 | 650 | 85 | solid.... | 34x2 | 36x2 | under body.. | 2 | 2 | 4½x4 | 14.50 | sing.... | top.... | air..... | none..... | dual... | Remy..... | 2-pt... |
| Mercury..Bulley Tract A | ..... | 3,400 | 71 | solid.... | 3-wheel | ..... | under hood.. | 4 | 5 | 4½x5 | 32.40 | pairs... | opp.... | cent.... | cell-sheet... | ..... | ..... | hand... |
| Mercury..Bulley Tractor. | ..... | 3,400 | 71 | solid.... | 34x4 | ..... | under hood.. | 4 | 5 | 4½x5 | 32.40 | pairs... | opp.... | cent.... | cell-sheet... | ..... | ..... | hand... |
| Modern.....T | 2,000 | ..... | 132* | solid.... | 36x3 | 36x4 | under hood.. | 4 | 3 | 3½x5 | 19.61 | block... | right... | thermo.. | fin-cast..... | sing.... | Bosch..... | fixed... |
| Modern.....N | 3,000 | ..... | 144* | solid.... | 36x3½ | 36x5 | under hood.. | 4 | 3 | 3½x5 | 22.50 | block... | right... | cent.... | fin-cast..... | sing.... | Bosch..... | fixed... |
| Modern.....R | 4,000 | ..... | 150* | solid.... | 36x4 | 36x4d | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | left.... | cent.... | fin-cast..... | sing.... | Bosch..... | fixed... |
| Modern.....B | 7,000 | ..... | 176* | solid.... | 38x5 | 38x5d | under hood.. | 4 | 3 | 4½x6½ | 36.15 | pairs... | right... | cent.... | fin-cast..... | sing.... | Eisemann.... | fixed... |
| Moon.....B | 3,000 | 1,650 | 140* | solid.... | 36x3½ | 36x5 | under hood.. | 4 | 3 | 3½x5½ | 22.50 | block... | l & h... | cent.... | sq-t-sheet... | dual... | Bosch..... | hand... |
| Moore..... | 5,000 | 2,500 | 162½ | solid.... | 36x4 | 36x3½d | under hood.. | 4 | 3 | 4½x5½ | 32.40 | pairs... | left.... | cent.... | cell-sheet... | dual... | Splitdorf..... | hand... |
| Moore..... | 10,000 | 4,500 | 175 | solid.... | 36x3 | 42x6d | under hood.. | 4 | 3 | 5½x7 | 44.20 | pairs... | opp.... | cent.... | fin-sheet.... | dual... | Splitdorf..... | hand... |
| Moreland..... | 2,000 | 1,550 | 126 | solid.... | 34x3½ | 34x4 | under hood.. | 4 | 3 | 3½x5 | 22.50 | block... | left.... | thermo.. | cell-cast.... | sing.... | Bosch..... | hand... |
| Moreland..... | 3,000 | 1,850 | 126* | solid.... | 34x3½ | 34x5 | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | right... | cent.... | cell-cast.... | sing.... | Bosch..... | hand... |
| Moreland..... | 5,000 | 2,400 | 168* | solid.... | 34x4 | 34x4d | under hood.. | 4 | 3 | 4½x5½ | 32.40 | pairs... | left.... | cent.... | cell-cast.... | sing.... | Bosch..... | hand... |
| Moreland..... | 8,000 | 3,200 | 186* | solid.... | 36x5 | 38x5d | under hood.. | 4 | 3 | 4½x6½ | 36.15 | pairs... | left.... | cent.... | cell-cast.... | sing.... | Bosch..... | hand... |
| Morton..... | 6,000 | ..... | 112 | solid.... | 40x6 | 40x6 | btw seats... | 4 | 3 | 4½x6½ | 36.15 | pairs... | left.... | cent.... | cell-sheet... | dual... | Dixie..... | hand... |
| Nelson & LeMoon...E1 | 2,000 | 1,700 | opt... | solid.... | 36x3 | 36x4 | under hood.. | 4 | 3 | 3½x5½ | 22.50 | block... | left.... | cent.... | sq-t-sheet... | sing.... | Bosch..... | ..... |
| Nelson & LeMoon...E2 | 4,000 | 2,250 | opt... | solid.... | 36x4 | 36x7 | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | left.... | cent.... | sq-t-sheet... | dual... | Bosch..... | ..... |
| Nelson & LeMoon...E3 | 6,000 | 2,950 | opt... | solid.... | 36x5 | 38x5d | under hood.. | 4 | 3 | 4½x5½ | 32.40 | pairs... | left.... | cent.... | sq-t-sheet... | dual... | Bosch..... | auto... |
| Netco.....C | 3,000 | 2,250 | 144* | solid.... | 36x3½ | 36x5 | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | left.... | cent.... | fin-cast..... | sing.... | Eisemann.... | fixed... |
| Netco.....D | 4,000 | 2,350 | 144* | solid.... | 36x4 | 36x6 | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | left.... | cent.... | fin-cast..... | sing.... | Eisemann.... | fixed... |
| New York.....L | 3,000 | 1,800 | 129* | solid.... | 36x3½ | 36x5 | under hood.. | 4 | 3 | 3½x5½ | 22.50 | block... | left.... | cent.... | sq-t-sheet... | sing.... | Bosch..... | fixed... |
| Old Reliable..... | 3,000 | 1,950 | 138* | solid.... | 34x3½ | 36x6 | under hood.. | 4 | 3 | 3½x5 | 22.50 | block... | left.... | cent.... | fin-sheet.... | sing.... | Bosch..... | hand... |
| Old Reliable..... | 4,000 | 2,750 | 120* | solid.... | 34x4 | 36x4d | under flr.... | 4 | 3 | 4½x5 | 29.00 | pairs... | opp.... | cent.... | fin-sheet.... | sing.... | Bosch..... | hand... |
| Old Reliable..... | 8,000 | 3,750 | 126* | solid.... | 36x5 | 36x5d | under flr.... | 4 | 3 | 4½x5½ | 36.15 | pairs... | opp.... | cent.... | fin-sheet.... | sing.... | Bosch..... | hand... |
| Old Reliable..... | 10,000 | 4,250 | 126* | solid.... | 36x6 | 36x6d | under flr.... | 4 | 3 | 4½x5½ | 36.15 | pairs... | opp.... | cent.... | fin-sheet.... | sing.... | Bosch..... | hand... |
| Old Reliable..... | 12,000 | 4,500 | 126* | solid.... | 36x6 | 40x7d | under flr.... | 4 | 3 | 4½x6½ | 36.15 | pairs... | left.... | cent.... | fin-sheet.... | sing.... | Bosch..... | hand... |
| Overland.....83 | 800 | 750-c | 106 | pneu.... | 33x4 | 33x4 | under hood.. | 4 | 5 | 4½x4½ | 27.20 | sing.... | left.... | thermo.. | cell-sheet... | sing.... | Splitdorf..... | hand... |
| Packard.....1D | 2,000 | 2,200 | 126* | solid.... | 34x3½ | 34x6 | under hood.. | 4 | 4 | 4 x5½ | 25.60 | block... | right... | cent.... | cell-sheet... | dual... | Dixie..... | hand... |
| Packard.....1½D | 3,000 | 2,500 | 126* | solid.... | 34x3½ | 34x3½d | under hood.. | 4 | 4 | 4 x5½ | 25.60 | block... | right... | cent.... | cell-sheet... | dual... | Dixie..... | hand... |
| Packard.....2D | 4,000 | 2,800 | 144* | solid.... | 34x4 | 34x4d | under hood.. | 4 | 4 | 4 x5½ | 25.60 | block... | right... | cent.... | cell-sheet... | dual... | Dixie..... | hand... |
| Packard.....3D | 6,000 | 3,400 | 156* | solid.... | 36x5 | 36x5d | under hood.. | 4 | 4 | 4½x5½ | 32.40 | block... | right... | cent.... | cell-sheet... | dual... | Dixie..... | hand... |
| Packard.....4D | 8,000 | 3,800 | 156* | solid.... | 36x5 | 40x5d | under hood.. | 4 | 4 | 4½x5½ | 32.40 | block... | right... | cent.... | cell-sheet... | dual... | Dixie..... | hand... |
| Palmer..... | 2,000 | 1,350 | 115½ | pneu*... | 35x4½* | 35x4½* | under hood.. | 4 | 3 | 3½x5 | 22.50 | block... | right... | thermo.. | cell-cast.... | sing.... | Bosch..... | fixed... |
| Palmer..... | 4,000 | 1,975 | 144 | solid.... | 36x3½ | 36x3½d | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | left.... | cent.... | cell-cast.... | sing.... | Bosch..... | fixed... |
| Palmer-Moore.....K | 1,500 | 1,150 | 106 | solid*... | 36x3* | 36x3½* | under hood.. | 4 | 3 | 3½x5½ | 19.61 | block... | r & h... | thermo.. | fin-cast..... | sing.... | Bosch..... | auto... |
| Palmer-Moore.....M | 2,000 | 1,350 | 126 | solid*... | 36x3½* | 36x4* | under hood.. | 4 | 3 | 3½x5½ | 22.50 | block... | r & h... | thermo.. | fin-cast..... | sing.... | Bosch..... | auto... |
| Paulding.....DI | 1,500 | 975 | 120* | solid.... | 36x3 | 36x3 | under hood.. | 4 | 3 | 3½x5 | 16.92 | block... | right... | thermo.. | z-z-t-sheet.. | dual... | Kingston..... | hand... |
| Paulding.....G-GI | 2,000 | 1,300 | 120* | solid.... | 36x3½ | 36x4 | under hood.. | 4 | 3 | 4 x5 | 25.60 | block... | right... | thermo.. | z-z-t-sheet.. | dual... | Kingston..... | hand... |
| Paulding.....E-EI | 3,000 | 1,600 | 130* | solid.... | 36x4 | 36x5 | under hood.. | 4 | 4 | 4 x6 | 25.60 | block... | right... | thermo.. | z-z-t-sheet.. | dual... | Kingston..... | hand... |
| Paulding.....H-HI | 4,000 | 1,950 | 160* | solid.... | 36x4 | 36x4d | under hood.. | 4 | 4 | 4½x6 | 29.00 | block... | right... | thermo.. | z-z-t-sheet.. | dual... | Kingston..... | hand... |

**ABBREVIATIONS: General,** *, *with other option;* opt, *optional.* **Price,** -c, *complete with body.* **Tires, Kind,** Pneu, *pneumatic;* Cush, *cushion;* p&s, *pneumatic in front and solid in rear;* s & st, *solid in front and steel in rear.* **Tire Sizes,** d, *dual.* **Motor Location,** btw seats, *between seats;* under flr, *under floor.* **Cylinders Cast,** sing, *singly or individually.* **Location of Valves,** opp, *opposite or T-head type;* top (two-cylinder motors only), *L-head cylinder laid horizontal with valves up;* r & h, *at right and in head, L-head cylinder;* l & h, *at left and in head, L-head cylinder;* 2-cyc, *two-cycle Motor, no valves.* **Water Circulation,** cent, *centrifugal pump;* gear, *gear pump;* thermo, *thermo-syphon circulation;* air, *air-cooled, no water.* **Radiator Type and Case,** fin-sheet, *finned-tube core with sheet metal casing;* fin-cast, *finned-tube core with cast aluminum casing;* sq-t-sheet, *square tube or flat tube core with sheet metal casing;* sq-t-cast, *square tube core with cast aluminum casing;* cell-sheet, *cellular or honeycomb core with sheet metal casing;* cell-cast, *cellular core with cast aluminum casing;* z-z-t-sheet, *zig-zag tube core with sheet metal casing;* z-z-t-cast, *zig-zag tube core with cast aluminum casing;* ring-cast, *copper tube core arranged in a ring about a centrifugal fan with a cast aluminum casing.* **Ignition, Type,** sing, *single;* doub, *double.* **Make of Magneto** (or other sparking device), Atw. Kent, *Atwater Kent.* **Spark Advance,** auto, *automatic;* auto-h, *automatic advance with hand adjustment;* 2-pt, *two-point fixed, battery circuit fixed in retard, magneto in advance.*

| MOTOR | | | | | | TRANSMISSION | | | | | | | | SPRINGS | | CONTROL | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GOVERNOR | | SPEED | | | | | GEARSET | | | | | | | | | | | |
| Type | Drive | Motor in r.p.m. | Truck in m.p.h. | Carbureter Make | Lubrication | Clutch Type | Type | Location | Speeds | Total Gear Reduction in High | Final Drive | Torque Taken By | Propulsion Taken By | Front | Rear | Steer | Levers | Name and Model |
| cent... | motor... | 1,100 | 18½ | Schebler..... | spl-press.. | dry-d... | selec... | unit-m.... | 3 | 6.00 –1 | top worm.... | tor-t..... | springs... | ½-ell... | ½-ell... | right... | cent... | Little Giant.....15 |
| ..... | ..... | 1,200 | 15 | Schebler..... | spl-press.. | wet-d... | selec... | unit-j..... | 3 | 6.88 –1 | dbl chn..... | ..... | rad-rd.... | ½-ell... | ½-ell... | left.... | cent... | Little Giant.....H |
| cent... | motor... | 1,100 | 15 | Schebler..... | spl-press.. | dry-d... | selec... | unit-m.... | 3 | 7.75 –1 | top worm.... | springs... | springs... | ½-ell... | ½-ell... | right... | cent... | Little Giant.....16 |
| ..... | ..... | 1,500 | ..... | Stromberg... | circ-spl... | cone.... | selec... | unit-m.... | 3 | 6.00 –1 | bevel..... | tor-arm.. | springs... | ellip.. | ellip.. | left*... | cent*.. | Lincoln.....D |
| l-b..... | motor... | 1,350 | 14½ | Locomobile.. | spl-press.. | cone.... | selec... | amid..... | 4 | 8.75*–1 | top worm.... | tor-arm... | rad-rd.. | ½-ell... | ½-ell... | right... | right... | Locomobile.....B |
| l-b... | motor... | 1,350 | 14½ | Locomobile.. | spl-press.. | cone.... | selec... | amid..... | 4 | 10.00 –1 | top worm.... | tor-arm... | rad-rd.... | ½-ell... | ½-ell... | right... | right... | Locomobile.....BB |
| cent... | motor... | 1,400 | 6 | ..... | press..... | wet-d... | ..... | ..... | 3 | ..... | top worm.... | ..... | ..... | ..... | ..... | left.... | ..... | Lombard..... |
| cent... | motor... | 1,000 | 16 | Stromberg... | spl-press.. | dry-d... | selec... | amid..... | 3 | 6.75 –1 | dbl chn..... | ..... | rad-rd.... | ½-ell... | plat... | left.... | cent... | Maccar.....K |
| cent... | motor... | 1,000 | 16 | Stromberg... | spl-press.. | dry-d... | selec... | amid..... | 3 | 6.75 –1 | top worm.... | springs... | springs... | ½-ell... | ½-ell... | left.... | cent... | Maccar.....L |
| cent... | motor... | 1,000 | 13 | Stromberg... | spl-press.. | dry-d... | selec... | unit-m.... | 3 | 8.50 –1 | dbl chn..... | ..... | rad-rd.... | ½-ell... | plat... | left.... | cent... | Maccar.....J |
| cent... | motor... | 1,000 | 13 | Stromberg... | spl-press.. | dry-d... | selec... | unit-m.... | 3 | 8.50 –1 | top worm.... | springs... | springs... | ½-ell... | ½-ell... | left.... | cent... | Maccar.....H |
| cent... | motor... | 1,000 | 11 | Stromberg... | spl-press.. | dry-d... | selec... | unit-m.... | 3 | 10.33 –1 | dbl chn..... | ..... | rad-rd.... | ½-ell... | plat... | left.... | cent... | Maccar.....O |
| cent... | motor... | 1,000 | 11 | Stromberg... | spl-press.. | dry-d... | selec... | unit-m.... | 3 | 10.33 –1 | top worm.... | springs... | springs... | ½-ell... | ½-ell... | left.... | cent... | Maccar.....M |
| cent... | motor... | 1,160 | 18½ | Stromberg... | spl-press.. | dry-d... | selec... | unit-m.... | 3 | 6.75 –1 | top worm.... | springs... | springs... | ½-ell... | ½-ell... | left*... | cent... | Mack.....AB |
| cent... | motor... | 1,160 | 16 | Stromberg... | spl-press.. | dry-d... | selec... | unit-m.... | 3 | 7.75 –1 | top worm.... | springs... | springs... | ½-ell... | ½-ell... | left*... | cent... | Mack.....AB |
| cent... | motor... | 1,160 | 16 | Stromberg... | spl-press.. | dry-d... | selec... | unit-m.... | 3 | 7.75 –1 | top worm.... | springs... | springs... | ½-ell... | ½-ell... | left*... | cent... | Mack.....AB |
| cent... | motor... | 1,000 | 15½ | Stromberg... | spl-press.. | dry-p... | selec... | unit-j..... | 3 | 7.54 –1 | dbl chn..... | ..... | rad-rd.... | ½-ell... | ½-ell... | left.... | cent... | Mack.....AC |
| cent... | motor... | 1,000 | 11½ | Stromberg... | spl-press.. | dry-p... | selec... | unit-j..... | 3 | 10.50 –1 | dbl chn..... | ..... | rad-rd.... | ½-ell... | ½-ell... | left.... | cent... | Mack.....AC |
| cent... | motor... | 1,000 | 8½ | Stromberg... | spl-press.. | dry-p... | selec... | unit-j..... | 3 | 14.10 –1 | dbl chn..... | ..... | rad-rd.... | ½-ell... | ½-ell... | left.... | cent... | Mack.....AC |
| cent... | motor... | 1,000 | 8½ | Stromberg... | spl-press.. | dry-p... | selec... | unit-j..... | 3 | 14.10 –1 | dbl chn..... | ..... | rad-rd.... | ½-ell... | ½-ell... | left.... | cent... | Mack Tractor.....AC |
| l-b..... | gearset.. | 1,150 | 15 | Rayfield..... | circ-spl... | exp-s.... | prog... | unit-m.... | 3 | ..... | int-gear..... | tor-t..... | rad-rd.... | ½-ell... | ½-ell... | left.... | left.... | Mais.....C&D |
| l-b..... | gearset.. | 1,150 | 15 | Rayfield..... | circ-spl... | exp-s.... | prog... | unit-m.... | 3 | ..... | int-gear..... | tor-t..... | rad-rd.... | ½-ell... | ½-ell... | left.... | left.... | Mais.....E&F |
| l-b..... | gearset.. | 1,250 | 12 | Rayfield..... | circ-spl... | exp-s.... | prog... | unit-m.... | 3 | ..... | int-gear..... | tor-t..... | rad-rd.... | ½-ell... | ½-ell... | left.... | left.... | Mais.....K, L&H |
| l-b..... | gearset.. | 1,250 | 12 | Rayfield..... | circ-spl... | exp-s.... | prog... | unit-m.... | 3 | ..... | int-gear..... | tor-t..... | rad-rd.... | ½-ell... | ½-ell... | left.... | left.... | Mais.....M |
| ..... | ..... | 1,200 | 18 | Stromberg... | pressure.. | wet-d... | selec... | unit-m.... | 3 | 7.95 –1 | dbl chn*..... | ..... | rad-rd.... | ½-ell... | ½-ell... | left.... | cent... | Martin.....R |
| ..... | ..... | 1,200 | 16 | Stromberg... | pressure.. | wet-d... | selec... | unit-j..... | 3 | 9.02 –1 | dbl chn*..... | ..... | rad-rd.... | ½-ell... | ½-ell... | right... | right... | Martin.....S |
| ..... | ..... | 1,200 | 15 | Stromberg... | pressure.. | wet-d... | selec... | unit-j..... | 3 | 10.40 –1 | dbl chn*..... | ..... | rad-rd.... | ½-ell... | ½-ell... | right... | right... | Martin.....E |
| ..... | ..... | 1,000 | 12 | Stromberg... | pressure.. | wet-d... | selec... | unit-j..... | 3 | 10.44 –1 | dbl chn*..... | ..... | rad-rd.... | ½-ell... | ½-ell... | right... | right... | Martin.....L |
| cent... | d-shaft.. | 1,286 | 25 | Stromberg... | circ-spl... | dry-d... | selec... | unit-m.... | 3 | 5.16 –1 | sp-bev..... | springs... | rad-rd.... | ½-ell... | ½-ell... | left.... | ..... | Menominee.....E |
| cent... | d-shaft.. | 1,308 | 16 | Stromberg... | circ-spl... | dry-d... | selec... | unit-m.... | 3 | 5.16 –1 | top worm.... | springs... | rad-rd.... | ½-ell... | ½-ell... | left.... | cent... | Menominee.....F |
| cent... | d-shaft.. | 1,210 | 14 | Stromberg... | circ-spl... | dry-d... | selec... | unit-m.... | 3 | 9.25 –1 | top worm.... | springs... | rad-rd.... | ½-ell... | ½-ell... | left.... | cent... | Menominee.....D |
| none... | none... | ..... | ..... | Schebler..... | circ-spl... | dry-d... | plan... | unit-m.... | 2 | 9.00 –1 | dbl chn..... | ..... | rad-rd.... | ellip.. | ellip.. | right... | right... | Mercury.....P |
| cent... | motor... | ..... | 12 | ..... | circ-spl... | cone.... | ind-c... | unit-m.... | 3 | ..... | dbl chn..... | ..... | rad-rd.... | coil... | ½-ell... | right... | right... | Mercury..Bulley Tract A |
| cent... | motor... | ..... | 12 | ..... | circ-spl... | cone. . | ind-c... | unit-m.... | 3 | ..... | dbl chn..... | ..... | rad-rd.... | ½-ell... | ½-ell... | right... | right... | Mercury..Bulley Tractor |
| none... | none... | ..... | ..... | Zenith..... | spl-press.. | dry-d... | selec... | unit-m.... | 3 | 7.75 –1 | top worm.... | springs... | springs... | ½-ell... | ½-ell... | right... | cent... | Modern.....T |
| none... | none... | ..... | ..... | Zenith..... | spl-press.. | dry-d... | selec... | unit-m.... | 3 | 7.75 –1 | top worm.... | springs... | rad-rd.... | ½-ell... | ½-ell... | right... | ..... | Modern.....N |
| ..... | ..... | ..... | ..... | Zenith..... | spl-press.. | dry-d... | selec... | unit-m.... | 3 | 8.50 –1 | top worm.... | springs... | rad-rd.... | ½-ell... | ½-ell... | right... | ..... | Modern.....R |
| ..... | ..... | ..... | ..... | Zenith..... | spl-press.. | cone.... | selec... | amid..... | 4 | 8.75 –1 | top worm.... | springs... | rad-rd.... | ½-ell... | ½-ell... | right... | ..... | Modern.....B |
| none... | none... | ..... | ..... | Stromberg... | circ-spl... | cone.... | prog... | unit-j..... | 3 | 5.62 –1 | bevel..... | ..... | rad-rd.... | ½-ell... | ½-ell... | left.... | cent... | Moon.....B |
| cent... | motor... | 1,100 | 17 | Master..... | circ-spl... | cone.... | selec... | unit-j..... | 3 | 6.50 –1 | dbl chn..... | ..... | rad-rd.... | ½-ell... | ½-ell... | left.... | cent... | Moore..... |
| cent... | motor... | 1,000 | 12 | Master..... | circ-spl... | cone.... | selec... | unit-j..... | 4 | 9.05 –1 | dbl chn..... | ..... | rad-rd.... | ½ ell... | ½-ell... | right... | right... | Moore..... |
| none... | none... | 1,150 | 18 | Master*..... | circ-spl... | dry-d... | selec... | unit-m.... | 3 | 6.00 –1 | top worm.... | tor-arm... | springs... | ½-ell... | ½-ell... | right... | cent... | Moreland..... |
| none... | none... | 1,120 | 15 | Master*..... | circ-spl... | dry-p... | selec... | unit-m.... | 3 | 6.75 –1 | top worm.... | springs... | rad-rd.... | ½-ell... | ½-ell... | right... | cent... | Moreland..... |
| cent... | motor... | 1,050 | 14 | Master*..... | circ-spl... | dry-p... | selec... | unit-m.... | 4 | 6.80 –1 | top worm.... | springs... | rad-rd.... | ½-ell... | ½-ell... | right... | cent... | Moreland..... |
| cent... | motor... | 1,000 | 12 | Master*..... | circ-spl... | dry-p... | selec... | amid..... | 4 | 7.80 –1 | top worm.... | springs... | rad-rd.... | ½-ell... | ½-ell... | right... | cent... | Moreland..... |
| cent... | motor... | 1,250 | 25½ | Carter..... | pressure.. | wet-d... | selec... | amid..... | 4 | 5.60 –1 | top worm-4.. | springs... | springs... | ..... | ..... | right... | right... | Morton..... |
| suct.... | motor... | 1,000 | 16 | Rayfield..... | circ-spl... | dry-d... | selec... | unit-m.... | 3 | 6.75 –1 | top worm.... | ..... | ..... | ½-ell... | ½-ell... | right... | cent... | Nelson & LeMoon...E1 |
| suct.... | motor... | 1,000 | 14 | Rayfield..... | circ-spl... | dry-d... | selec... | unit-m.... | 3 | 8.75 –1 | top worm.... | ..... | ..... | ½-ell... | ½-ell... | right... | cent... | Nelson & LeMoon...E2 |
| suct.... | motor... | 1,000 | 12 | Rayfield..... | circ-spl... | dry-d... | selec... | unit-m.... | 3* | 8.75 –1* | top worm.... | ..... | ..... | ½-ell... | ½-ell... | right... | cent... | Nelson & LeMoon...E3 |
| cent... | d-shaft.. | 1,200 | 15 | Zenith..... | circ-spl... | dry-p... | selec... | unit-m.... | 3 | 7.50 –1 | top worm.... | springs... | springs... | ½-ell... | ½-ell... | left.... | cent... | Netco.....C |
| cent... | d-shaft.. | 1,200 | 15 | Zenith..... | circ-spl... | dry-p... | selec... | unit-m.... | 3 | 7.50 –1 | top worm.... | springs... | springs... | ½-ell... | ½-ell... | left.... | cent... | Netco.....D |
| hyd.... | motor... | ..... | 18 | Stromberg... | spl-press.. | cone.... | selec... | amid..... | 3 | ..... | top worm*..... | ..... | rad-rd.... | ½-ell... | ½-ell... | right... | right... | New York.....L |
| none... | none... | ..... | 16 | Stromberg... | spl-press.. | dry-d... | selec... | unit-m.... | 3 | 7.75 –1 | top worm.... | springs... | springs... | ½-ell... | ½-ell... | right... | cent... | Old Reliable..... |
| none... | none... | ..... | 16 | Stromberg... | spl-press.. | wet-d... | selec... | unit-j..... | 3 | 8.23 –1 | dbl chn..... | ..... | rad-rd.... | ½-ell... | ½-ell... | right... | right... | Old Reliable..... |
| none... | none... | ..... | 14 | Stromberg... | spl-press.. | wet-d... | selec... | unit-j..... | 3 | 8.14 –1 | dbl chn..... | ..... | rad-rd.... | ½-ell... | ½-ell... | right... | right... | Old Reliable..... |
| none... | none... | ..... | 12 | Stromberg... | spl-press.. | wet-d... | selec... | unit-j..... | 3 | 8.82 –1 | dbl chn..... | ..... | rad-rd.... | ½-ell... | ½ ell... | right... | right... | Old Reliable..... |
| l-b..... | motor... | 750 | 10 | Stromberg... | circ-spl... | wet-d... | selec... | unit-j..... | 3 | 8.93 –1 | dbl chn..... | ..... | rad-rd.... | ½-ell... | ½-ell... | right... | right... | Old Reliable..... |
| none... | none... | ..... | 45 | Stromberg... | circ-spl... | cone.... | selec... | unit-x..... | 3 | 3.69 –1 | bevel..... | tor-t..... | tor-t..... | ½-ell... | ¾-ell... | left.... | cent... | Overland.....83 |
| cent... | motor... | 1,000 | 16 | Packard..... | pressure.. | dry-d... | prog... | amid..... | 3 | 6.25 –1 | top worm.... | tor-arm... | rad-rd.... | ½-ell... | ½-ell... | left.... | left.... | Packard.....1D |
| cent... | motor... | 1,000 | 16 | Packard..... | pressure.. | dry-d... | prog... | amid..... | 3 | 6.25 –1 | top worm.... | tor-arm... | rad-rd.... | ½-ell... | ½-ell... | left.... | left.... | Packard.....1½D |
| cent... | motor... | 1,000 | 14 | Packard..... | pressure.. | dry-d... | prog... | amid..... | 3 | 7.25 –1 | top worm.... | tor-arm... | rad-rd.... | ½-ell... | ½-ell... | left.... | left.... | Packard.....2D |
| cent... | motor... | 1,000 | 12 | Packard..... | pressure.. | dry-d... | prog... | amid..... | 3 | 9.00 –1 | top worm.... | tor-arm... | rad-rd.... | ½-ell... | ½-ell... | left.... | left.... | Packard.....3D |
| cent... | motor... | 1,000 | 12 | Packard..... | pressure.. | dry-d... | prog... | amid..... | 3 | 10.00 –1 | top worm.... | tor-arm... | rad-rd.... | ½-ell... | ½-ell... | left.... | left.... | Packard.....4D |
| none... | none... | ..... | ..... | Stromberg... | circ-spl... | dry-d... | selec... | unit-m.... | 3 | ..... | int-gear..... | springs... | springs... | ½-ell... | ½-ell... | left.... | cent... | Palmer..... |
| suct.... | motor... | ..... | 15 | Stromberg... | circ-spl... | dry-d... | selec... | unit-m.... | 3 | ..... | top worm..... | springs... | rad-rd.... | ½-ell... | ½-ell... | left.... | cent... | Palmer..... |
| suct.... | motor... | 1,275 | 20 | Zenith..... | circ-spl... | dry-d... | selec... | amid..... | 3 | 6.83 –1 | int-gear..... | tor-arm... | springs... | ½-ell... | ½-ell... | left.... | ..... | Palmer-Moore.....K |
| cent... | duplex.. | 1,150 | 18 | Zenith..... | circ-spl... | dry-d... | selec... | amid..... | 3 | 6.83 –1 | int-gear..... | tor-arm... | springs... | ½-ell... | plat... | left.... | ..... | Palmer-Moore.....M |
| none... | none... | 1,000 | 18 | Kingston.... | spl-press.. | dry-d... | selec... | unit-m.... | 3 | 6.00 –1 | int-gear..... | springs... | springs... | ½-ell... | plat... | left*... | cent... | Paulding.....DI |
| none... | none... | 1,000 | 18 | Kingston.... | spl-press.. | dry-d... | selec... | unit-m.... | 3 | 6.00 –1 | int-gear*.... | springs... | springs*.. | ½-ell... | plat... | left*... | cent... | Paulding.....G-GI |
| none... | none... | 1,000 | 15 | Kingston.... | spl-press.. | dry-d... | selec... | unit-m.... | 3 | 7.00 –1 | int-gear*.... | springs... | springs*.. | ½-ell... | ½-ell... | left*... | cent... | Paulding.....E-EI |
| none... | none... | 1,000 | 13½ | Kingston.... | spl-press.. | dry-d... | selec... | unit-m.... | 3 | 8.00 –1 | int-gear*.... | springs... | springs*.. | ½-ell... | ½-ell... | left*... | cent... | Paulding.....H-HI |

**ABBREVIATIONS:** (continued). **Governor Type,** cent, *centrifugal;* l-b, *loose-ball;* suct, *suction;* hyd, *hydraulic;* elec, *electric.* **Governor Drive,** motor, *from motor;* d-shaft, *from driving shaft;* f-wheel, *from front wheel;* duplex, *from both the motor and driving shaft by overrunning clutches.* **Lubrication,** splash, *non-circulating or simple splash;* circ-spl, *circulating splash;* spl-press, *splash-pressure;* fuel-inj, *fuel injection, oil mixed with fuel;* pressure, *pressure feed, no splash.* **Clutch Type,** dry-p, *dry plate;* dry-d, *dry multiple disk;* wet-d, *wet disk or disk-in-oil;* wet-p, *wet plate or plate-in-oil;* r-cone, *reversed cone or inverted cone;* cont-b, *contracting band;* exp-s, *expanding shoe.* **Gearset Type,** prog, *progressive sliding gear;* selec, *selective sliding gear;* plan, *planetary;* ind-c, *constant-mesh, individual-clutch;* fric, *friction;* elec, *electric.* **Gearset Location,** amid, *amidships;* unit-m, *unit with motor;* unit-j, *unit with jackshaft;* unit-x, *unit with axle.* **Gearset Speeds,** inf, *infinite number.* **Final Drive,** int-g, int-gear, *internal-gear;* sing chn, *single chain;* dbl chn, *double chain;* doub-red, *double reduction;* spur-g, *spur gears;* sp-bev, *spiral bevel;* f, *front wheel or wheels;* 4, *four-wheel driven.* **Torque Taken By,** rad-rd, *radius rods;* tor-arm, *torque arm;* tor-t, *torsion tube;* sub-f, *sub-frame.* **Propulsion Taken By,** rad-rd, *radius rod;* tor-t, *torsion tube;* tor-arm, *torque arm;* sub-f, *sub-frame.* **Springs,** ellip, *elliptic;* ½-ell, *half elliptic;* ¼-ell, *quarter elliptic;* ¾-ell, *three-quarters elliptic;* plat, *platform;* cant, *cantilever.* **Control, Levers,** cent, *center;* c & r, *gearshift center, brake right;* c & l, *gearshift center, brake left.*

| Name and Model | Capacity in Pounds | Price of Chassis | Wheelbase in Inches | TIRES | | | MOTOR | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Kind | SIZES IN INCHES | | Location | No. of Cylinders | No. of Crankshaft Bearings | Bore and Stroke | N.A.C.C. Hp. | Cylinders Cast | Valves Placed | COOLING | | IGNITION | | |
| | | | | | Front | Rear | | | | | | | | Water Circulation | Radiator Core and Case | Type | Make | Spark Advance |
| Peerless.....TC2 | 4,000 | ..... | 145 | solid.... | 36x4 | 36x4d | under hood.. | 4 | 3 | 4½x6½ | 32.40 | pairs... | opp.... | gear.... | fin-sheet.... | dual... | Remy..... | hand.. |
| Peerless.....TC3 | 6,000 | ..... | 151* | solid.... | 36x4 | 40x4d | under hood.. | 4 | 3 | 4½x6½ | 32.40 | pairs... | opp.... | gear.... | fin-sheet.... | dual... | Remy..... | hand... |
| Peerless.....TC4 | 8,000 | ..... | 151* | solid.... | 36x5 | 40x5d | under hood.. | 4 | 3 | 4½x6½ | 32.40 | pairs... | opp.... | gear.... | fin-sheet.... | dual... | Remy..... | hand... |
| Peerless.....TC5 | 10,000 | ..... | 151* | solid.... | 38x6 | 42x6d | under hood.. | 4 | 3 | 4½x6½ | 32.40 | pairs... | opp.... | gear.... | fin-sheet.... | dual... | Remy..... | hand... |
| Peerless.....TC6 | 12,000 | ..... | 151* | solid.... | 38x7 | 42x7d | under hood.. | 4 | 3 | 4½x6½ | 32.40 | pairs... | opp.... | gear.... | fin-sheet.... | dual... | Remy..... | hand... |
| Pierce-Arrow..... | 4,000 | 3,000 | 150* | solid.... | 36x4 | 36x4d | under hood.. | 4 | ..... | 4 x5½ | 25.60 | pairs... | opp.... | cent.... | fin-cast..... | dual... | Bosch..... | hand... |
| Pierce-Arrow..... | 10,000 | 4,500 | 168* | solid.... | 36x5 | 40x6d | under hood.. | 4 | ..... | 4½x6 | 38.25 | pairs... | opp.... | cent.... | fin-cast..... | dual... | Bosch..... | hand... |
| Reo.....F | 1,500 | 1,000 | 120 | pneu.... | 34x4½ | 34x4½ | under hood.. | 4 | 3 | 4½x4½ | 27.20 | pairs... | r & h... | cent.... | fin-sheet.... | sing.... | Remy..... | hand... |
| Reo.....J | 4,000 | 1,650 | 146 | solid.... | 36x4 | 36x3½d | under hood.. | 4 | 3 | 4½x4½ | 27.20 | pairs... | r & h... | cent.... | fin-cast..... | dual... | National.... | hand... |
| Republic.....F | 1,500 | 995-c | 124 | solid*... | 34x3* | 34x3½* | under hood.. | 4 | 3 | 3½x5 | 19.61 | block... | right... | thermo.. | fin-sheet.... | sing.... | Bosch..... | fixed... |
| Republic.....E | 2,000 | 1,275 | 144 | solid*... | 34x3* | 34x4* | under hood.. | 4 | 3 | 3½x5 | 22.50 | block... | right... | thermo.. | fin-sheet.... | sing.... | Bosch..... | fixed... |
| Republic.....A | 4,000 | 1,475 | 144 | solid.... | 34x4 | 34x6* | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | right... | cent.... | fin-sheet.... | sing.... | Bosch..... | fixed... |
| Republic.....T | 6,000 | 2,400 | 165* | solid.... | 36x5 | 36x5d | under hood.. | 4 | 3 | 4½x5½ | 29.00 | block... | right... | cent.... | fin-sheet.... | sing.... | Bosch..... | hand... |
| Rowe.....CW | 2,000 | 2,450 | 130 | solid.... | 34x3½ | 34x4 | under hood.. | 4 | 3 | 3½x5 | 16.92 | block... | left.... | cent.... | sq-t-sheet... | sing.... | Bosch..... | hand... |
| Rowe.....CDW | 4,000 | 2,800 | 144 | solid.... | 34x4 | 36x3½d | ..... | 4 | 3 | 4 x5 | 25.62 | block... | left.... | cent.... | sq-t-sheet... | sing.... | Bosch..... | ..... |
| Rowe.....DFW | 6,000 | 3,400 | 156 | solid.... | 36x5 | 36x5d | under hood.. | 4 | 3 | 4½x5 | 29.00 | pairs... | opp.... | cent.... | sq-t-sheet... | sing.... | Bosch..... | ..... |
| Rowe.....TW | 10,000 | 4,500 | 156 | solid.... | 36x6 | 40x6d | under hood.. | 4 | 3 | 4½x5½ | 36.15 | pairs... | opp.... | cent.... | sq-t-sheet... | sing.... | Bosch..... | hand... |
| Royal.....A | 7,000 | 3,500 | 148 | solid.... | 36x5 | 38x5d | under hood.. | 4 | 3 | 4½x5 | 29.00 | pairs... | opp.... | cent.... | fin-cast..... | dual... | Bosch..... | fixed... |
| Royal.....A | 10,000 | 4,500 | 138* | solid.... | 36x6 | 40x6d | under hood * | 4 | 3 | 4½x5½ | 36.15 | pairs... | opp.... | cent.... | fin-cast..... | dual... | Bosch..... | fixed... |
| Royal.....A | 12,000 | 4,800 | 140 | solid.... | 36x6 | 40x6d | under seats.. | 4 | 3 | 5⅛x5½ | 41.61 | pairs... | opp.. | cent.... | fin-cast..... | dual... | Bosch..... | fixed... |
| R.S..... | 350 | 305 | 65 | pneu.... | 28x3 | 28x3 | amid..... | 2 | 2 | 3½x3½ | 9.12 | sing.... | back... | air..... | none..... | sing.... | Bosch..... | hand... |
| Salvador..... | 4,000 | 2,000 | 124* | cush.... | 36x4½ | 36x6 | btw seats... | 4 | 3 | 4 x4½ | 25.60 | pairs... | left.... | cent.... | cell-cast.... | sing.... | Eisemann.... | auto... |
| Sandow..... | 3,000 | 1,800 | 150* | solid.... | 36x3 | 36x4 | under hood.. | 4 | 3 | 3½x5½ | 22.50 | block... | left.... | cent.... | cell-sheet... | sing.... | Bosch..... | hand... |
| Sandow..... | 4,000 | 2,350 | 171* | solid.... | 36x4 | 36x4d | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | left.... | cent.... | cell-sheet... | sing.... | Bosch..... | hand... |
| Sandow..... | 4,000 | 2,000 | 171* | solid.... | 36x4 | 36x4d | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | left.... | cent.... | cell-sheet... | sing.... | Bosch..... | hand... |
| Sandow..... | 6,000 | 3,000 | 186* | solid.... | 36x5 | 36x5d | under hood.. | 4 | 3 | 4½x5½ | 32.40 | pairs... | left.... | cent.... | cell-sheet... | sing.... | Bosch..... | hand... |
| Sandow..... | 6,000 | 2,500 | 186* | solid.... | 36x5 | 40x5d | under hood.. | 4 | 3 | 4½x5½ | 32.40 | pairs... | left.... | cent.... | cell-sheet... | sing.... | Bosch..... | hand... |
| Sanford.....O | 1,500 | 1,290 | 120 | pneu*... | 34x4½* | 35x5* | under hood.. | 4 | 3 | 3½x5½ | 19.61 | block... | right... | cent.... | fin-cast..... | sing.... | Splitdorf..... | fixed... |
| Sanford.....P | 2,000 | 1,350 | 138 | pneu*... | 34x4½* | 35x5* | under hood.. | 4 | 3 | 3½x5½ | 19.61 | block... | right... | cent.... | fin-cast..... | sing.... | Splitdorf..... | fixed... |
| Sanford.....M | 4,000 | 1,910 | 140 | solid.... | 36x4 | 36x6 | under hood.. | 4 | 3 | 4 x4½ | 25.60 | pairs... | right... | cent.... | fin-cast..... | sing.... | Splitdorf..... | 2-pt.... |
| Saurer..... | 10,000 | 4,800 | 153½ | solid.... | 36x5 | 42x5d | under hood.. | 4 | 3 | 4½x5½ | 30.65 | pairs... | opp.... | cent.... | cell-sheet... | sing.... | Bosch..... | hand... |
| Saurer..... | 13,000 | 5,800 | 156½ | solid.... | 36x5 | 42x6d | under hood.. | 4 | 3 | 4½x5½ | 30.65 | pairs... | opp.... | cent.... | cell-sheet... | sing.... | Bosch..... | hand... |
| Saxon..... | 400 | 395 | 96 | pneu.... | 28x3 | 28x3 | under hood.. | 4 | 2 | 2½x4 | 12.08 | block... | left.... | thermo.. | cell-sheet... | sing.... | Atw. Kent.... | auto... |
| Selden.....T | 2,000 | 1,700 | 126½* | solid.... | 34x3 | 34x3d | under hood.. | 4 | 3 | 3½x5 | 19.61 | block... | left.... | thermo.. | sq-t-sheet... | sing.... | Bosch..... | fixed... |
| Selden.....JC | 4,000 | 2,000 | 150 | solid.... | 36x4 | 36x4d | under hood.. | 4 | 3 | 3½x5½ | 22.50 | block... | right... | cent.... | sq-t-sheet... | sing.... | Bosch..... | fixed... |
| Selden.....JWL | 4,000 | 2,250 | 150* | solid.... | 36x4 | 36x4d* | under hood.. | 4 | 3 | 4½x5 | 27.20 | block... | right... | cent.... | sq-t-sheet... | sing.... | Bosch..... | fixed... |
| Selden.....N | 7,000 | 2,950 | 164 | solid.... | 36x5 | 36x5d | under hood.. | 4 | 3 | 4½x5½ | 32.40 | pairs... | left.... | cent.... | sq-t-sheet... | sing.... | Eisemann.... | fixed... |
| Service.....120 | 2,000 | 1,375 | 135 | solid.... | 34x3 | 34x4 | under hood.. | 4 | 3 | 3½x5½ | 19.61 | block... | right... | thermo.. | fin-sheet.... | sing.... | Bosch..... | hand... |
| Service.....QW | 3,000 | 2,200 | 150 | solid.... | 36x3½ | 36x5 | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | right... | cent.... | fin-sheet.... | sing.... | Eisemann.... | hand... |
| Service.....PW | 4,000 | 2,500 | 160* | solid.... | 36x4 | 36x4d | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | right... | cent.... | fin-sheet.... | sing.... | Eisemann.... | hand... |
| Service.....HW | 7,000 | 3,000 | 171* | solid.... | 36x5 | 36x5d | under hood.. | 4 | 3 | 4½x6 | 32.40 | block... | right... | cent.... | fin-cast..... | dual... | Eisemann.... | hand... |
| Service.....HX | 10,000 | 4,000 | 171* | solid.... | 36x6 | 40x6d | under hood.. | 4 | 3 | 4½x6½ | 36.15 | pairs... | left.... | cent.... | cell-sheet... | dual... | Eisemann.... | hand... |
| Signal.....F | 2,000 | 1,550 | 144* | solid.... | 34x3 | 36x4 | under hood.. | 4 | 3 | 3½x5½ | 22.50 | block... | left.... | cent.... | fin-cast..... | sing.... | Eisemann.... | fixed... |
| Signal.....H | 3,000 | 1,750 | 144* | solid.... | 34x3½ | 36x5 | under hood.. | 4 | 3 | 3½x5½ | 22.50 | block... | left.... | cent.... | fin-cast..... | sing.... | Eisemann.... | fixed... |
| Signal.....J | 4,000 | 2,100 | 150 | solid.... | 34x4 | 36x4d | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | left.... | cent.... | fin-cast..... | sing.... | Eisemann.... | fixed... |
| Signal.....M | 7,000 | 3,000 | 168* | solid.... | 40x5 | 40x5d | under hood.. | 4 | 3 | 4½x5½ | 32.40 | pairs... | left.... | cent.... | fin-cast..... | sing.... | Eisemann.... | fixed... |
| South Bend.....30 | 1,500 | 1,475 | 128* | pneu.... | 34x4½ | 34x4½ | under hood.. | 4 | 3 | 3½x5 | 22.50 | block... | left.... | thermo.. | cell-sheet... | dual... | Bosch..... | hand... |
| South Bend.....40 | 3,000 | 1,750 | 130* | solid.... | 36x3½ | 36x5 | under hood.. | 4 | 3 | 4 x5 | 25.60 | block... | left.... | cent.... | cell-sheet... | dual... | Bosch..... | hand... |
| South Bend.....40-2 | 4,000 | 2,000 | 142 | solid.... | 36x4 | 36x3½d | under hood.. | 4 | 3 | 4 x5 | 25.60 | block... | left.... | cent.... | cell-sheet... | dual... | Bosch..... | hand... |
| South Bend.....60 | 7,000 | 3,250 | 160* | solid.... | 36x6 | 36x5d | under hood.. | 4 | 3 | 4½x5½ | 36.15 | pairs... | opp.... | cent.... | cell-sheet... | dual... | Bosch..... | hand... |
| Standard.....70 | 4,000 | 2,000 | 140 | solid.... | 36x4 | 36x6 | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | left.... | cent.... | fin-sheet.... | sing.... | Eisemann.... | auto... |
| Standard.....60 | 7,000 | 2,850 | 144* | solid.... | 36x5 | 36x5d | under hood.. | 4 | 3 | 4½x5½ | 32.40 | pairs... | left.... | cent.... | fin-sheet.... | sing.... | Eisemann.... | auto... |
| Standard.....40 | 8,000 | 3,025 | 144* | solid.... | 36x5 | 36x5d | under hood.. | 4 | 3 | 4½x5½ | 32.40 | pairs... | left.... | cent.... | fin-sheet.... | sing.... | Eisemann.... | auto... |
| Standard.....50 | 10,000 | 3,400 | 144* | solid.... | 36x5 | 40x6d | under hood.. | 4 | 3 | 4½x5½ | 29.00 | pairs... | left.... | cent.... | fin-sheet.... | sing.... | Eisemann.... | auto... |
| Standard Tractor.....B | 12,000 | 3,250 | 72 | solid.... | 36x5 | 36x5d | btw seats... | 4 | 3 | 4½x6½ | 36.15 | pairs... | left.... | cent.... | sq-t-sheet... | dual... | Bosch..... | hand... |
| Standard Tractor.....D | 20,000 | 4,000 | 76 | solid.... | 36x5 | 40x6d | btw seats... | 4 | 3 | 4½x6½ | 36.15 | pairs... | left.... | cent.... | sq-t-sheet... | dual... | Bosch..... | hand... |
| Stearns..... | 10,000 | 3,800 | 144* | solid.... | 34x5 | 38x5d | under hood.. | 4 | 5 | 4½x5½ | 29.00 | pairs... | sleeve.. | cent.... | cell-sheet... | dual... | Bosch..... | hand... |
| Stegeman..... | 3,000 | 1,900 | 150 | solid.... | 34x3½ | 36x5 | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | ..... | cent.... | sq-t-sheet... | sing.... | Eisemann.... | auto... |
| Stegeman..... | 5,000 | 2,500 | 144* | solid.... | 34x4 | 36x4d | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | left.... | cent.... | sq-t-sheet... | sing.... | Eisemann.... | auto... |
| Stegeman.....Special | 5,000 | 2,500 | 142* | solid.... | 40x4 | 40x6 | under hood.. | 4 | 3 | 4½x5½ | 27.20 | block... | left.... | cent.... | sq-t-sheet... | sing.... | Eisemann.... | auto... |
| Stegeman..... | 7,000 | ..... | 156 | solid.... | 36x4 | 40x5d | under hood.. | 6 | ..... | 3½x5½ | 33.75 | threes.. | left.... | cent.... | —cast..... | sing.... | Eisemann.... | auto... |
| Sterling..... | 1,500 | 895 | 127 | pneu.... | 34x4 | 34x4 | under hood.. | 4 | 2 | 3½x4½ | 15.64 | block... | right... | thermo.. | fin-cast..... | sing.... | Bosch..... | hand... |
| Sterling..... | 4,000 | 2,800 | 148* | solid.... | 36x4 | 36x4d | under hood.. | 4 | 3 | 4 x5½ | 25.60 | pairs... | right... | cent.... | fin-cast..... | sing.... | Eisemann.... | auto... |
| Sterling..... | 7,000 | 3,400 | 158* | solid.... | 36x4 | 36x5d | under hood.. | 4 | 3 | 4½x5½ | 29.00 | pairs... | right... | cent.... | fin-cast..... | sing.... | Eisemann.... | auto... |
| Sterling..... | 10,000 | 4,500 | 178 | solid.... | 36x6 | 40x6d | under hood.. | 4 | 3 | 4½x6½ | 32.40 | pairs... | right... | cent.... | fin-cast..... | dual... | Eisemann.... | auto... |
| Sterling..... | 10,000 | 4,500 | 178 | solid.... | 36x6 | 40x6d | under hood.. | 4 | 3 | 4½x6½ | 32.40 | pairs... | right... | cent.... | fin-cast..... | dual... | Eisemann.... | auto... |
| Sterling..... | 14,000 | 4,750 | 178 | solid.... | 36x6 | 40x7d | under hood.. | 4 | 3 | 4½x6½ | 36.15 | pairs... | right... | cent.... | fin-cast..... | dual... | Eisemann.... | auto... |
| Stewart (B).....3 | 1,500 | ..... | 118* | pneu.... | 34x4½ | 34x4½ | under hood.. | 4 | 3 | 3½x5½ | 19.61 | block... | right... | thermo.. | cell-sheet... | sing.... | Bosch..... | fixed... |
| Stewart (B).....4 | 2,500 | ..... | 128 | solid.... | 35x3½ | 35x4 | under hood.. | 4 | 3 | 3½x5½ | 19.61 | block... | right... | thermo.. | cell-sheet... | sing.... | Bosch..... | fixed... |
| Stewart (C).....A | 2,000 | 700 | 96 | solid.... | 36x3 | 36x3 | under flr.... | 2 | 2 | 5 x5½ | 20.00 | sing.... | ..... | cent.... | cell-sheet... | dual... | Kingston..... | hand... |
| Studebaker.....SF | 1,000 | 785 | 112 | pneu.... | 34x4 | 34x4 | under hood.. | 4 | 3 | 3¼x5 | 24.22 | block... | left.... | cent.... | fin-sheet.... | sing.... | battery..... | hand... |
| Studebaker.....7 | 2,000 | ..... | 125 | pneu.... | 35x5 | 35x5 | under hood.. | 4 | 3 | 3¼x5 | 24.22 | block... | left.... | cent.... | fin-sheet.... | sing.... | battery..... | hand... |

**ABBREVIATIONS: General,** *, *with other options;* opt, *optional.* **Price,** -c, *complete with body.* **Tires, Kind,** Pneu, *pneumatic;* Cush, *cushion;* p&s, *pneumatic in front and solid in rear;* s & st, *solid in front and steel in rear.* **Tire Sizes,** d, *dual.* **Motor Location,** btw seats, *between seats;* under flr, *under floor.* **Cylinders Cast,** sing, *singly or individually.* **Location of Valves,** opp, *opposite or T-head type;* top (two cylinder motors only), *L-head cylinder laid horizontal with valves up;* r & h, *at right and in head, L-head cylinder;* l & h, *at left and in head, L-head cylinder;* 2-cyc, *two cycle motor, no valve.* **Water Circulation,** cent, *centrifugal pump;* gear, *gear pump;* thermo, *thermo-syphon circulation;* air, *air-cooled, no water* **Radiator Type and Case,** fin-sheet, *finned-tube core with sheet metal casing;* fin-cast, *finned-tube core with cast aluminum casing;* sq-t-sheet, *square tube or flat tube core with sheet metal casing;* sq-t-cast, *square tube core with cast aluminum casing;* cell-sheet, *cellular or honeycomb core with sheet metal casing;* cell-cast, *cellular core with cast aluminum casing;* z-z-t-sheet, *zig-zag tube core with sheet metal casing;* z-z-t-cast, *zig-zag tube core with cast aluminum casing;* ring-cast, *copper tube core arranged in a ring about a centrifugal fan with a cast aluminum casing.* **Ignition, Type,** sing, *single;* doub, *double.* **Make of Magneto** (or other sparking device), Atw. Kent, *Atwater Kent.* **Spark Advance,** auto, *automatic;* auto-h, *automatic advance with hand adjustment;* 2-pt, *two-point fixed, battery circuit fixed in retard, magneto in advance.*

| MOTOR | | | | | | TRANSMISSION | | | | | | | | SPRINGS | | CONTROL | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GOVERNOR | | SPEED | | | | | GEARSET | | | | | | | | | | | |
| Type | Drive | Motor in r.p.m. | Truck in m.p.h. | Carbureter Make | Lubrication | Clutch Type | Type | Location | Speeds | Total Gear Reduction in High | Final Drive | Torque Taken By | Propulsion Taken By | Front | Rear | Steer | Levers | Name and Model |
| cent | motor | | | Stromberg | splash | cone | selec | amid | 3 | 6.00 –1 | top worm | springs | springs | ½-ell | ½-ell | right | right | Peerless TC2 |
| cent | motor | 925 | 14½ | Stromberg | splash | cone | selec | unit-j | 4 | 7.45 –1 | dbl chn | | rad-rd | ½-ell | ½-ell | right | right | Peerless TC3 |
| cent | motor | | | Stromberg | splash | cone | selec | unit-j | 4 | 8.70 –1 | dbl chn | | rad-rd | ½-ell | ½-ell | right | right | Peerless TC4 |
| cent | motor | | | Stromberg | splash | cone | selec | unit-j | 4 | 10.50 –1 | dbl chn | | rad-rd | ½-ell | ½-ell | right | right | Peerless TC5 |
| cent | motor | | | Stromberg | splash | cone | selec | unit-j | 4 | 10.50 –1 | dbl chn | | rad-rd | ½-ell | ½-ell | right | right | Peerless TC6 |
| cent | motor | 1,050 | 16 | Pierce-A | pressure | cone | selec | unit-m | 3 | 7.00 –1 | top worm | tor-arm | rad-rd | ½-ell | ½-ell | right | right | Pierce-Arrow |
| cent | motor | 950 | 14 | Pierce-A | pressure | cone | selec | amid | 3 | 7.80 –1 | top worm | tor-arm | rad-rd | ½-ell | ½-ell | right | right | Pierce-Arrow |
| none | none | | 22 | Johnson | circ-spl | dry-d | selec | amid | 3 | 4.00 –1 | bevel | tor-arm | springs | ½-ell | ½-ell | left | cent | Reo F |
| hyd | motor | 1,200 | 15 | Johnson | circ-spl | dry-d | selec | amid | 3 | 8.70 –1 | dbl chn | | rad-rd | ½-ell | ½-ell | left | cent | Reo J |
| suct | motor | 1,200 | 18 | Stromberg | spl-press | dry-d | selec | unit-m | 3 | 7.00 –1 | int-gear | springs | springs | ½-ell | ½-ell | left | cent | Republic F |
| suct | motor | 1,000 | 15 | Stromberg | spl-press | dry-d | selec | unit-m | 3 | 7.00 –1 | int-gear | springs | springs | ½-ell | ½-ell | left | cent | Republic E |
| suct | motor | 1,100 | 13 | Stromberg | spl-press | dry-d | selec | unit-m | 3 | 9.00 –1 | int-gear | springs | springs | ½-ell | ½-ell | left | | Republic A |
| | | 1,100 | 11 | Stromberg | spl-press | dry-d | selec | unit-m | 4 | 11.00 –1 | int-gear | springs | springs | ½-ell | ½-ell | left | | Republic T |
| cent | motor | 1,200 | | | | dry-d | selec | unit-m | 4 | | top worm | springs | springs | ½-ell | ½-ell | left | cent | Rowe CW |
| cent | motor | 1,100 | | Rayfield | pressure | dry-d | selec | unit-m | 4 | | top worm | springs | springs | ½-ell | ½-ell | left | c & l | Rowe CDW |
| cent | motor | 1,000 | | Rayfield | pressure | | selec | amid | 4 | | top worm | springs | rad-rd | ½-ell | ½-ell | left | cent | Rowe DFW |
| cent | motor | | | | pressure | wet-d | selec | amid | | | top worm | springs | rad-rd | ½-ell | ½-ell | left | cent | Rowe TW |
| suct | motor | 900 | 15 | Stromberg | pressure | wet-d | ind-c | amid | 3 | | top worm | springs | springs | ½-ell | ½-ell | right | right | Royal A |
| suct | motor | 900 | 12 | Stromberg | pressure | wet-d | ind-c | amid* | 3 | | top worm* | springs | springs* | ½-ell | ½-ell | right | right | Royal A |
| suct | motor | 900 | 10 | Stromberg | pressure | wet-d | ind-c | unit-j | 3 | | dbl chn | | rad-rd | ½-ell | ½-ell | right | right | Royal A |
| none | none | 3,200 | 35 | Schebler | splash | wet-d | prog | amid | 3 | 11.32 –1 | sing chn | | sub-f | ½-ell | ellip | cent | cent | R.S |
| cent | d-shaft | 1,200 | 16 | Zenith | pressure | wet-d | selec | unit-m | 3 | 7.00 –1 | top worm | springs | springs | ½-ell | ½-ell | left* | cent | Salvador |
| suct | motor | 1,000 | 20 | Stromberg | circ-spl | dry-d | selec | unit-m | 3 | 7.75 –1 | top worm | springs | springs | ½-ell | ½-ell | right | cent | Sandow |
| suct | motor | 1,000 | 18 | Stromberg | circ-spl | dry-d | selec | unit-m | 3 | 7.00 –1 | dbl chn | | rad-rd | ½-ell | ½-ell | right | cent | Sandow |
| suct | motor | 1,000 | 18 | Stromberg | circ-spl | dry-d | selec | unit-m | 3 | 7.75 –1 | top worm | springs | springs | ½-ell | ½-ell | right | cent | Sandow |
| suct | motor | 1,000 | 12 | Stromberg | circ-spl | dry-d | selec | unit-m | 3 | 7.00 –1 | dbl chn | | rad-rd | ½-ell | ½-ell | right | cent | Sandow |
| suct | motor | 1,000 | 12 | Stromberg | circ-spl | dry-d | selec | unit-m | 3 | 9.45 –1 | top worm | springs | springs | ½-ell | ½-ell | right | cent | Sandow |
| none | none | 1,500 | 18 | Schebler | circ-spl | dry-d | selec | unit-m | 3 | 6.83 –1 | int-gear | springs | springs | ½-ell | ½-ell | left | | Sanford O |
| none | none | 1,500 | 18 | Schebler | circ-spl | dry-d | selec | unit-m | 3 | | int-gear | springs | springs | ½-ell | ½-ell | left | cent | Sanford P |
| cent | motor | 1,500 | 14 | Schebler | circ-spl | dry-d | selec | unit-m | 3 | 8.99 –1 | int-gear* | springs* | springs* | ½-ell | ½-ell | left | cent | Sanford M |
| cent | motor | 1,000 | 12½ | Saurer | spl-press | cone | selec | unit-j | 4 | 10.00 –1 | dbl chn | | rad-rd | ½-ell | ½-ell | right | right | Saurer |
| cent | motor | 1,000 | 9¼ | Saurer | spl-press | cone | selec | unit-j | 4 | 13.50 –1 | dbl chn | | rad-rd | ½-ell | ½-ell | right | right | Saurer |
| none | none | 2,000 | 47 | Mayer | circ-spl | dry-d | prog | unit-x | 3 | 3.50 –1 | bevel | tor-t | tor-t | cant | cant | left | cent | Saxon |
| cent | motor | 1,130 | 17 | Stromberg | circ-spl | dry-d | selec | unit-m | 3 | 6.75 –1 | top worm | springs | springs | ½-ell | ½-ell | left* | cent | Selden T |
| cent | motor | 1,146 | 13 | Stromberg | circ-spl | dry-d | selec | unit-m | 3 | 9.45 –1 | int-gear | springs | springs | ½-ell | ½-ell | left* | cent | Selden JC |
| cent | motor | 1,150 | 13 | Stromberg | circ-spl | dry-d | selec | unit-m | 3 | 9.25 –1 | top worm | springs | springs | ½-ell | ½-ell | left* | cent | Selden JWL |
| cent | motor | 1,250 | 13 | Stromberg | circ-spl | dry-d | selec | unit-m | 4 | 10.33 –1 | top worm | springs | rad-rd | ½-ell | ½-ell | right | cent | Selden N |
| none | none | 1,200 | 18 | Stromberg | spl-press | dry-d | selec | unit-m | 3 | 6.70 –1 | top worm | springs | springs | ½-ell | ½-ell | left | cent | Service 120 |
| cent | motor | 1,000 | 14 | Stromberg | spl-press | dry-p | selec | amid | 3 | 7.75 –1 | top worm | springs | springs | ½-ell | ½-ell | left | cent | Service QW |
| cent | motor | 870 | 12 | Stromberg | spl-press | dry-p | selec | amid | 3 | 7.75 –1 | top worm | springs | springs | ½-ell | ½-ell | left | cent | Service PW |
| cent | motor | 900 | 11 | Stromberg | pressure | dry-p | selec | amid | 4 | 8.75 –1 | top worm | springs | rad-rd | ½-ell | ½-ell | left | cent | Service HW |
| cent | motor | 900 | 10 | Stromberg | spl-press | cone | selec | unit-j | 4 | 9.00 –1 | dbl chn | | rad-rd | ½-ell | ½-ell | left | cent | Service HX |
| suct | motor | 1,200 | 15 | Stromberg | spl-press | dry-d | selec | unit-m | 3 | 7.75 –1 | top worm | springs | springs | ½-ell | ½-ell | left* | cent | Signal F |
| suct | motor | 1,295 | 15 | Stromberg | spl-press | dry-d | selec | unit-m | 3 | 9.25 –1 | top worm | springs | springs | ½-ell | ½-ell | left* | cent | Signal H |
| suct | motor | 1,295 | 15 | Stromberg | spl-press | dry-d | selec | unit-m | 3 | 9.25 –1 | top worm | springs | springs | ½-ell | ½-ell | left* | cent | Signal J |
| suct | motor | 1,300 | 15 | Stromberg | spl-press | dry-d | selec | unit-m | 3 | 10.33 –1 | top worm | springs | rad-rd | ½-ell | ½-ell | left* | cent | Signal M |
| none | none | 1,800 | 25 | Stromberg | circ-spl | wet-d | selec | unit-m | 3 | 6.50 –1 | top worm | springs | springs | ½-ell | ½-ell | right | | South Bend 30 |
| none | none | 1,800 | 25 | Stromberg | circ-spl | wet-d | selec | unit-m | 3 | 8.50 –1 | top worm* | springs | springs* | ½-ell | ½-ell | right | | South Bend 40 |
| none | none | 1,800 | 22 | Stromberg | circ-spl | wet-d | selec | unit-m | 3 | 8.50 –1 | top worm* | springs | springs | ½-ell | ½-ell | right | | South Bend 40–2 |
| suct | f-wheel | 1,800 | 15 | Stromberg | circ-spl | wet-d | selec | amid | 3 | 11.50 –1 | top worm | springs | springs | ½-ell | ½-ell | right | | South Bend 60 |
| suct | motor | 1,100 | 15 | Schebler | circ-spl | cone | selec | amid | 3 | 7.75 –1 | top worm | springs | rad-rd | ½-ell | ½-ell | left | cent | Standard 70 |
| suct | motor | 1,050 | 12 | Stromberg | circ-spl | dry-d | selec | unit-m | 3 | 10.33 –1 | top worm | springs | rad-rd | ½-ell | ½-ell | left | cent | Standard 60 |
| suct | motor | 1,050 | 12 | Stromberg | circ-spl | dry-d | selec | unit-m | 3 | 9.50 –1 | dbl chn | | rad-rd | ½-ell | ½-ell | left | cent | Standard 40 |
| suct | motor | 1,050 | 9 | Stromberg | circ-spl | dry-d | selec | unit-m | 3 | 13.00 –1 | top worm | tor-arm | rad-rd | ½-ell | ½-ell | left | cent | Standard 50 |
| none | none | 1,000 | 12 | Holley | circ-spl | dry-p | ind-c | amid | 3 | 9.00 –1 | dbl chn | | rad-rd | ½-ell | ½-ell | right | right | Standard Tractor B |
| none | none | 1,000 | 6¾ | Holley | circ-spl | dry-p | ind-c | amid | 3 | 18.00 –1 | dbl chn | | rad-rd | ½-ell | ½-ell | right | right | Standard Tractor D |
| none | none | 1,000 | 12 | Stromberg | spl-press | dry-d | selec | amid | 4 | 9.00 –1 | dbl chn | | rad-rd | ½-ell | ½-ell | left | cent | Stearns |
| cent | motor | 1,100 | 18 | Stromberg | spl-press | dry-d | selec | unit-m | 3 | | top worm* | springs | springs* | ½-ell | ½-ell | left | c & l | Stegeman |
| cent | motor | 1,100 | 15 | Stromberg | spl-press | dry-d | selec | unit-m | 3 | | top worm* | springs | springs* | ½-ell | ½-ell | left | c & l | Stegeman |
| cent | motor | 1,100 | 15 | Stromberg | spl-press | dry-d | selec | unit-m | 3 | | top worm* | springs | springs* | ½-ell | ½-ell | left | c & l | Stegeman Special |
| cent | motor | 1,100 | 12 | Stromberg | spl-press | dry-d | selec | unit-m | 3 | 10.33 –1 | top worm* | springs | springs* | ½-ell | ½-ell | left | c & l | Stegeman |
| none | none | 1,333 | 20 | Schebler | circ-spl | dry-d | prog | unit-m | 3 | 7.00 –1 | top worm | springs | springs | ½-ell | ½-ell | left | cent | Sterling |
| cent | motor | 1,040 | 14½ | Holley | circ-spl | dry-d | selec | unit-m | 3 | 7.70 –1 | top worm | springs | springs | ½-ell | ½-ell | left | cent | Sterling |
| cent | motor | 1,040 | 13 | Holley | circ-spl | dry-d | selec | unit-m | 3 | 8.75 –1 | top worm | springs | springs | ½-ell | ½-ell | left | cent | Sterling |
| cent | motor | 975 | 10 | Holley | circ-spl | dry-d | selec | unit-m | 4 | 11.20 –1 | dbl chn | | rad-rd | ½-ell | ½-ell | left | cent | Sterling |
| cent | motor | 975 | 10 | Holley | circ-spl | dry-d | selec | unit-m | 4 | 11.75 –1 | top worm | springs | springs | ½-ell | ½-ell | left | cent | Sterling |
| cent | motor | 975 | 10 | Holley | circ-spl | dry-d | selec | unit-m | 4 | 11.20 –1 | dbl chn | tor-arm | rad-rd | ½-ell | ½-ell | left | cent | Sterling |
| none | none | 1,500 | 25 | Zenith | circ spl | dry-d | selec | unit m | 3 | 6.00 –1 | int-gear | springs | springs | ½-ell | ½-ell | left | cent | Stewart (B) 3 |
| none | none | 1,500 | 20 | Zenith | circ spl | dry-d | selec | unit-m | 3 | 7.00 –1 | int-gear | springs | springs | ½-ell | ½-ell | left | cent | Stewart (B) 4 |
| none | none | | 18 | Schebler | pressure | dry-p | plan | unit-m | 2 | 7.00 –1 | dbl chn | | rad-rd | ½-ell | ½-ell | left | cent | Stewart (C) A |
| none | none | | | Schebler | circ-spl | cone | selec | unit-x | 3 | 4.58 –1 | bevel | tor-arm | rad-rd | ½-ell | ¾-ell | left | cent | Studebaker SF |
| cent | f-wheel | 960 | 20 | Schebler | circ-spl | cone | selec | unit-x | 3 | 5.00 –1 | bevel | tor-arm | rad-rd | ½-ell | ½-ell | left | cent | Studebaker 7 |

**ABBREVIATIONS:** (continued). **Governor Type,** cent, *centrifugal;* l-b, *loose-ball;* suct, *suction;* hyd, *hydraulic;* elec, *electric.* **Governor Drive,** motor, *from motor;* d-shaft, *from driving shaft;* f-wheel, *from front wheel;* duplex, *from both the motor and driving shaft by overrunning clutches.* **Lubrication,** splash, *non-circulating or simple splash;* circ-spl, *circulating splash;* spl-press, *splash-pressure;* fuel-inj, *fuel injection, oil mixed with fuel;* pressure, *pressure feed, no splash.* **Clutch Type,** dry-p, *dry plate;* dry-d, *dry multiple disk;* wet-d, *wet disk or disk-in-oil;* wet-p, *wet plate or plate-in-oil;* r-cone, *reversed cone or inverted cone;* cont-b, *contracting band;* exp-s, *expanding shoe.* **Gearset Type,** prog, *progressive sliding gear;* selec, *selective sliding gear;* plan, *planetary;* ind-c, *constant-mesh, individual-clutch;* fric, *friction;* elec, *electric.* **Gearset Location,** amid, *amidships;* unit-m, *unit with motor;* unit-j, *unit with jackshaft;* unit-x, *unit with axle.* **Gearset Speeds,** inf, *infinite number.* **Final Drive,** int-g, int-gear, *internal-gear;* sing chn, *single chain;* dbl chn, *double chain;* doub-red, *double reduction;* spur g, *spur gears;* sp-bev, *spiral bevel;* f, *front wheel or wheels;* 4, *four-wheel driven.* **Torque Taken By,** rad-rd, *radius rods;* tor-arm, *torque arm;* tor-t, *torsion tube;* sub-f, *sub-frame.* **Propulsion Taken By,** rad-rd, *radius rod;* tor-t, *torsion tube;* tor-arm, *torque arm;* sub-f, *sub-frame.* **Springs,** ellip, *elliptic;* ½-ell, *half elliptic;* ¼-ell, *quarter elliptic;* ¾-ell, *three-quarters elliptic;* plat, *platform;* cant, *cantilever.* **Control Levers,** cent, *center;* c & r, *gearshift center, brake right;* c & l, *gearshift center, brake left.*

| Name and Model | Capacity in Pounds | Price of Chassis | Wheelbase in Inches | TIRES | | | MOTOR | | | | | | | | COOLING | | IGNITION | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Kind | SIZES IN INCHES | | Location | No. of Cylinders | No. of Crankshaft Bearings | Bore and Stroke | N.A.C.C. Hp. | Cylinders Cast | Valves Placed | | Water Circulation | Radiator Core and Case | Type | Make | Spark Advance |
| | | | | | Front | Rear | | | | | | | | | | | | | |
| Sullivan....G | 3,000 | 1,600 | 129 | solid.... | 36x3 | 36x4 | under hood.. | 4 | ..... | 3¾x4½ | 22.50 | block... | r & h... | | thermo.. | fin-sheet.... | sing.... | Bosch..... | fixed... |
| Sullivan....E | 4,000 | 2,250 | 150 | solid.... | 36x4 | 36x6 | under hood.. | 4 | 3 | 4¼x5½ | 27.20 | block... | r & h... | | cent.... | fin-sheet.... | sing.... | Bosch..... | fixed... |
| Superior....A | 2,000 | 1,350 | 124 | solid*... | 34x3½* | 34x4* | under hood.. | 4 | 3 | 3½x5 | 19.61 | block... | head... | | thermo.. | cell-sheet... | sing.... | Eisemann.... | fixed... |
| Superior....C | 4,000 | 1,800 | 144 | solid.... | 36x4 | 36x6 | under hood.. | 4 | 3 | 3½x5 | 22.50 | block... | head... | | cent.... | cell-sheet... | sing.... | Eisemann.... | fixed... |
| Tiffin....A-AC | 1,500 | 1,400* | 112 | solid.... | 34x3 | 34x3 | under hood.. | 4 | 3 | 3½x5 | 19.61 | block... | right... | | thermo.. | fin-sheet.... | sing.... | Bosch..... | hand... |
| Tiffin....AI | 2,000 | 1,600 | 112 | solid.... | 34x3 | 34x4 | under hood.. | 4 | 3 | 3½x5 | 19.61 | block... | right... | | thermo.. | fin-sheet.... | sing.... | Bosch..... | hand... |
| Tiffin....GI-GC | 3,000 | 1,800* | 128 | solid.... | 36x3½ | 36x5 | under hood.. | 4 | 3 | 3½x5½ | 22.50 | block... | left.... | | cent.... | fin-sheet.... | sing.... | Bosch..... | hand... |
| Tiffin....MW-MC | 4,000 | 2,600* | 140 | solid.... | 36x4 | 36x3½d | under hood.. | 4 | 3 | 4¼x5½ | 27.20 | block... | left.... | | cent.... | fin-sheet.... | sing.... | Bosch..... | hand... |
| Tiffin....RW-R | 10,000 | 4,250* | 168 | solid.... | 36x5 | 42x5d | under hood.. | 6 | 3 | 3½x5½ | 33.75 | threes.. | right... | | cent.... | fin-sheet.... | sing.... | Bosch..... | hand... |
| Tiffin....SW-S | 12,000 | 4,550* | 168 | solid.... | 36x6 | 42x6d | under flr.... | 6 | 3 | 3½x5½ | 33.75 | threes.. | right... | | cent.... | fin-sheet.... | sing.... | Bosch..... | hand... |
| Tower..... | 4,000 | 1,600 | 135 | solid.... | 34x3½ | 34x3½d | under hood.. | 4 | ..... | 3½x5 | 19.61 | block... | left.... | | thermo.. | sq-t-sheet... | sing.... | Bosch..... | hand... |
| Transit....E | 2,000 | 2,000 | 130 | solid.... | 36x3½ | 36x3½d | under flr.... | 4 | 3 | 4½x5½ | 32.40 | pairs... | left.... | | cent.... | sq-t-sheet... | sing.... | Bosch..... | hand... |
| Transit....F | 4,000 | 2,850 | 144 | solid.... | 36x4 | 36x4d | btw seats... | 4 | 3 | 4½x5½ | 32.40 | pairs... | left.... | | cent.... | sq-t-sheet... | sing.... | Bosch..... | hand... |
| Transit....T | 7,000 | 3,500 | 144* | solid.... | 36x5 | 36x5d | btw seats... | 4 | 3 | 4½x5½ | 32.40 | pairs... | left.... | | cent.... | sq-t-sheet... | sing.... | Bosch..... | hand... |
| Transit....V | 10,000 | 4,500 | 144* | solid.... | 36x6 | 40x6d | btw seats... | 4 | 3 | 4½x5½ | 32.40 | pairs... | left.... | | cent.... | sq-t-sheet... | sing.... | Bosch..... | hand... |
| Transport Tractor....T | 10,000 | 2,500 | 80 | solid.... | 34x4 | 34x3½d | btw seats... | 4 | 3 | 3½x5½ | 19.61 | block .. | right... | | thermo.. | cell-sheet... | sing.... | Bosch..... | fixed... |
| Trumbull....16D | 500 | 340 | 80* | pneu.... | 28x3 | 28x3 | under hood.. | 4 | 2 | 2¾x4 | 13.37 | block... | right... | | thermo.. | fin-sheet.... | sing.... | Splitdorf..... | hand... |
| Twin City..... | 2,000 | 1,350 | 104* | solid.... | 34x3 | 36x3½ | under seats.. | 2 | 2 | 5 x5 | 20.00 | sing.... | opp.... | | thermo.. | fin-sheet.... | sing.... | K.-W..... | hand.. |
| Twin City..... | 4,000 | 1,500 | 104* | solid.... | 34x3 | 36x3½ | under seats.. | 4 | 5 | 3½x5 | 19.61 | block... | left.... | | thermo.. | fin-sheet.... | sing.... | K.-W..... | hand... |
| Universal....G | 3,000 | 1,950 | 130* | solid.... | 34x3½ | 34x5 | under hood.. | 4 | 3 | 3¾x5½ | 22.50 | block... | right... | | gear.... | fin-cast..... | sing.... | Eisemann.... | hand... |
| Universal....D | 4,000 | 2,800 | 132* | solid.... | 36x4 | 36x4d | under flr.... | 4 | 3 | 4 x5½ | 25.60 | pairs... | opp.... | | cent.... | cell-sheet... | dual.... | Eisemann.... | hand... |
| Universal....A | 6,000 | 3,400 | 132* | solid.... | 36x5 | 36x4d | under flr.... | 4 | 3 | 4 x5½ | 25.60 | pairs... | opp.... | | cent.... | cell-sheet... | dual.... | ..... | hand... |
| United....AG | 3,000 | ..... | 144 | solid*... | 34x3½ | 34x5 | under hood.. | 4 | ..... | 3¾x5 | 22.50 | block... | right... | | cent.... | sq-t-sheet... | sing.... | Eisemann.... | fixed... |
| United....BSW | 4,000 | 2,250 | 144* | solid.... | 36x4 | 36x4d | under hood.. | 4 | 3 | 4¼x5 | 27.20 | block... | left.... | | cent.... | sq-t-sheet... | sing.... | Eisemann.... | fixed... |
| United....CSW | 7,000 | 2,900 | 144* | solid.... | 36x5 | 36x5d | under hood.. | 4 | 3 | 4½x5½ | 32.40 | pairs... | left.... | | cent.... | sq-t-sheet... | sing.... | Eisemann.... | fixed... |
| United....ESW | 10,000 | 3,500 | 144* | solid.... | 36x6 | 40x6d | under hood.. | 4 | 3 | 5 1/16x5½ | 41.61 | pairs... | opp.... | | cent.... | sq-t-sheet... | sing.... | Eisemann.... | fixed... |
| U. S....H | 4,000 | 2,700 | 138 | solid.... | 34x4 | 36x4d | under hood.. | 4 | 3 | 4¼x5½ | 27.20 | block... | left.... | | cent.... | sq-t-sheet... | dual.... | Bosch..... | hand... |
| U. S....J | 7,000 | 3,400 | 162 | solid.... | 36x5 | 40x5d | under hood.. | 4 | 3 | 4½x5 | 32.40 | pairs... | left.... | | cent.... | sq-t-sheet... | dual.... | Bosch..... | hand... |
| U. S....K | 10,000 | 4,200 | 168 | solid.... | 36x5 | 40x6d | under hood.. | 4 | 3 | 4½x5 | 32.40 | pairs... | left.... | | cent.... | sq-t-sheet... | dual.... | Bosch..... | hand... |
| Velie....25 | 3,000 | 2,250 | 150 | solid.... | 36x4 | 36x5 | under hood.. | 4 | 3 | 4¼x5½ | 27.20 | block... | left.... | | cent.... | fin-cast..... | sing.... | Bosch..... | hand... |
| Velie....26 | 7,000 | 3,350 | 172 | solid.... | 36x5 | 40x5d | under hood.. | 4 | 3 | 4½x5½ | 32.40 | pairs... | left.... | | cent.... | fin-cast..... | sing.... | Bosch..... | hand... |
| Vim....18 | 1,000 | 620 | 100 | pneu.... | 31x4 | 31x4 | under hood.. | 4 | 3 | 3 x4½ | 14.40 | block... | right... | | thermo.. | fin-sheet.... | sing.... | Dixie..... | hand... |
| Voltz....C | 6,000 | 2,750 | 142 | solid.... | 36x5 | 38x5d | under hood.. | 4 | 3 | 4½x5½ | 32.40 | pairs... | left.... | | cent.... | cell-sheet... | dual.... | Eisemann.... | auto... |
| Voltz....T | 10,000 | 3,600 | 142 | solid.... | 36x6 | 40x6d | under hood.. | 4 | 3 | 5 x5½ | 40.00 | pairs... | opp.... | | cent.... | cell-sheet... | dual.... | Eisemann.... | auto... |
| Vulcan..... | 4,000 | 2,750 | 150* | solid.... | 36x4 | 34x3½d | under hood.. | 4 | 3 | 4¼x5½ | 30.00 | pairs... | left.... | | thermo.. | sq-t-cast.... | dual.... | Remy..... | hand... |
| Vulcan..... | 6,000 | 3,250 | 156* | solid.... | 36x5 | 34x4d | under hood.. | 4 | 3 | 4¼x5½ | 30.00 | pairs... | left.... | | thermo.. | sq-t-cast.... | dual.... | Remy..... | hand... |
| Vulcan..... | 10,000 | 4,500 | 165* | solid.... | 36x6 | 36x6d | under hood.. | 4 | 3 | 4¼x5½ | 30.00 | pairs... | left.... | | thermo.. | sq-t-cast.... | dual.... | Remy..... | hand... |
| Walter..... | 10,000 | 4,750 | 144* | solid*... | 40x6 | 40x5d | under hood.. | 4 | 3 | 4¾x6 | 30.65 | block... | right... | | cent.... | fin-sheet.... | sing.... | Eisemann.... | auto... |
| Walter..... | 12,000 | 5,000 | 144* | solid.... | 40x6 | 40x6d | under hood.. | 4 | 3 | 4¾x6 | 30.65 | block... | right... | | cent.... | fin-sheet.... | sing.... | Eisemann.... | auto... |
| Walter..... | 15,000 | 5,250 | 144* | solid.... | 40x6 | 40x6d | under hood.. | 4 | 3 | 4¾x6 | 30.65 | block... | right... | | cent.... | fin-sheet.... | sing.... | Eisemann.... | auto... |
| Walter....Tractor | 24,000 | 5,000 | 108* | solid.... | 40x4d | 40x4d | under hood.. | 4 | 3 | 4¾x6 | 30.65 | block... | right... | | cent.... | fin-sheet.... | sing.... | Eisemann.... | auto... |
| Watson..... | 10,000 | ..... | 158 | s & st... | 40x4d | 53x5 | under hood.. | 4 | 3 | 4¾x6 | 30.65 | block... | right... | | cent.... | fin-sheet.... | sing.... | Eisemann.... | auto... |
| White....GBBE | 1,500 | 2,100 | 133½ | pneu.... | 34x4½ | 34x4½ | under hood.. | 4 | 2 | 3¾x5½ | 22.50 | block... | right... | | cent.... | sq-t-sheet... | sing.... | Bosch..... | hand... |
| White....TBC | 3,000 | 3,000 | 145½ | pneu.... | 36x4½ | 36x4½d | under hood.. | 4 | 2 | 3¾x5½ | 22.50 | block... | right... | | cent.... | sq-t-sheet... | sing.... | Bosch..... | hand... |
| White....TAD | 6,000 | 3,700 | 163 | solid.... | 36x5 | 40x5d | under hood.. | 4 | 2 | 3¾x5½ | 22.50 | block... | right... | | cent.... | sq-t-sheet... | sing.... | Bosch..... | hand... |
| White....TCD | 10,000 | 4,500 | 169 | solid.... | 36x5 | 40x6d | under hood.. | 4 | 3 | 4¼x6¾ | 29.00 | block... | right... | | cent.... | sq-t-sheet... | sing.... | Bosch..... | hand... |
| Wichita....A | 2,000 | 1,650 | 110* | solid.... | 34x3 | 34x4 | under hood.. | 4 | 2 | 3½x5 | 16.92 | block... | left.... | | thermo.. | cell-sheet... | sing.... | Dixie..... | hand... |
| Wichita....K | 2,000 | 1,650 | 118* | solid.... | 36x3 | 36x4 | under hood.. | 4 | 2 | 3½x5 | 19.61 | block... | left.... | | thermo.. | cell-sheet... | sing.... | Dixie..... | hand... |
| Wichita....L | 3,000 | 1,800 | 118* | solid.... | 36x3 | 36x5 | under hood.. | 4 | 2 | 3½x5 | 19.61 | block... | left.... | | thermo.. | cell-sheet... | sing.... | Dixie..... | hand... |
| Wichita....B | 4,000 | 2,100 | 118* | solid.... | 34x3½ | 34x3d | under hood.. | 4 | 2 | 3½x5 | 19.61 | block... | left.... | | thermo.. | cell-sheet... | sing.... | Dixie..... | hand... |
| Wichita....M | 4,000 | 2,100 | 118* | solid.... | 36x3½ | 36x3* | under hood.. | 4 | 2 | 3½x5 | 19.61 | block... | left.... | | thermo.. | cell-sheet... | sing.... | Dixie..... | hand... |
| Wichita....O | 7,000 | 3,250 | 165 | solid.... | 36x5 | 36x5d | under hood.. | 4 | 3 | 4¼x5½ | 29.00 | pairs... | left.... | | cent.... | cell-sheet... | sing.... | Dixie..... | hand... |
| Wilcox....T | 1,000 | 1,000 | 115 | pneu.... | 34x4 | 34x4 | under hood.. | 4 | 3 | 3½x5 | 19.61 | block... | left.... | | thermo.. | fin-sheet.... | sing.... | Bosch..... | hand... |
| Wilcox....N | 1,500 | 1,200 | 120 | pneu.... | 35x4½ | 35x4½ | under hood.. | 4 | 3 | 3½x5 | 19.61 | block... | left.... | | thermo.. | fin-sheet.... | sing.... | Bosch..... | hand... |
| Wilcox....S | 2,000 | 1,600 | 128 | pneu*... | 35x5* | 35x5* | under hood.. | 4 | 3 | 3¾x5 | 22.50 | block... | left.... | | ..... | fin-sheet.... | sing.... | Bosch..... | hand... |
| Wilcox....R | 3,000 | 1,800 | 134 | solid.... | 36x4 | 36x5 | under hood.. | 4 | 3 | 4¼x5 | 29.00 | pairs... | right... | | cent.... | fin-sheet.... | sing.... | Bosch..... | hand... |
| Witt-Will....WD1 | 2,240 | ..... | 120 | solid.... | 36x3 | 36x4 | under hood.. | 4 | 3 | 3¾x5½ | 22.50 | block... | left.... | | cent.... | fin-sheet.... | sing.... | Eisemann.... | auto... |
| Witt-Will....WD2 | 4,480 | 2,250 | 144 | solid.... | 36x3½ | 36x3½d | under hood.. | 4 | 3 | 4¼x5½ | 27.20 | block... | left.... | | cent.... | fin-sheet.... | sing.... | Eisemann... | auto... |

## Received Too Late to Classify

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Acason..... | 4,000 | 2,100 | 150 | solid.... | 34x3½ | 36x3½d | under hood.. | 4 | 3 | 4¼x5½ | 29.00 | pairs... | left.... | | cent.... | fin-cast..... | sing.... | Dixie..... | hand... |
| Acason..... | 7,000 | 2,500 | 170 | solid.... | 36x4 | 36x5d | under hood.. | 4 | 3 | 4¼x5½ | 29.00 | pairs... | left.... | | cent.... | fin-cast..... | sing.... | Dixie..... | hand... |
| Mogul....LM | 3,000 | 1,600 | 125* | solid.... | 36x4 | 36x5 | under hood.. | 4 | ..... | 3¾x5½ | 22.50 | block... | left.... | | cent.... | cell-cast.... | sing.... | Bosch..... | fixed... |
| Mogul....LW | 4,000 | 2,000 | 138* | solid.... | 36x5 | 38x4d | under hood.. | 4 | ..... | 4¼x5½ | 27.20 | block... | left.... | | cent.... | cell-cast.... | sing.... | Bosch..... | fixed... |
| Mogul....L | 5,000 | 2,250 | 138* | solid.... | 36x5 | 38x4d | under hood.. | 4 | ..... | 4¼x5½ | 27.20 | block... | left.... | | cent.... | cell-cast.... | sing.... | Bosch..... | fixed... |
| Mogul....T | 7,000 | 2,550 | 165* | solid.... | 36x5 | 36x5d | under hood.. | 4 | ..... | 4½x5½ | 32.40 | pairs... | left.... | | cent.... | cell-sheet... | sing.... | Bosch..... | fixed... |
| Phoenix Centiped..... | ..... | ..... | ..... | steel.... | ..... | creeper | under hood.. | 4 | 5 | 5½x7 | 48.48 | single.. | r & h... | | cent.... | sq-t-sheet... | sing.... | Swiss..... | hand... |
| Wilson....E | 4,000 | 2,000 | 144 | solid.... | 36x4 | 36x4d | under hood.. | 4 | ..... | 4¼x5½ | 27.20 | block... | ..... | | cent.... | fin-..—.... | sing.... | ..... | fixed... |

**ABBREVIATIONS: General** *, *with other options;* opt, *optional.* **Price,** -c, *complete with body.* **Tires, Kind,** Pneu, *pneumatic;* Cush, *cushion;* p&s, *pneumatic in front and solid in rear;* s & st, *solid in front and steel in rear.* **Tire Sizes,** d, *dual.* **Motor Location,** btw seats, *between seats;* under flr, *under floor.* **Cylinders Cast,** sing, *singly or individually.* **Location of Valves,** opp, *opposite or T-head type;* top (two-cylinder motors only), *L-head cylinder laid horizontal with valves up;* r & h, *at right and in head, L-head cylinder;* l & h, *at left and in head, L-head cylinder;* 2-cyc, *two-cycle motor, no valves.* **Water Circulation, cent,** *centrifugal pump;* gear, *gear pump;* thermo, *thermo-syphon circulation;* air, *air-cooled, no water.* **Radiator Type and Case,** fin-sheet, *finned-tube core with sheet metal casing;* fin-cast, *finned-tube core with cast aluminum casing;* sq-t-sheet, *square tube or flat tube core with sheet metal casing;* sq-t-cast, *square tube core with cast aluminum casing;* cell-sheet, *cellular or honeycomb core with sheet metal casing;* cell-cast, *cellular core with cast aluminum casing;* z-z-t-sheet, *zig-zag tube core with sheet metal casing;* z-z-t-cast, *zig-zag tube core with cast aluminum casing;* ring-cast, *copper tube core arranged in a ring about a centrifugal fan with a cast aluminum casing.* **Ignition, Type,** sing, *single;* doub, *double.* **Make of Magneto** (or other sparking device), Atw. Kent, *Atwater Kent.* **Spark Advance,** auto, *automatic;* auto-h, *automatic advance with hand adjustment;* 2-pt, *two-point fixed, battery circuit fixed in retard, magneto in advance.*

| MOTOR | | | | | | TRANSMISSION | | | | | | | | SPRINGS | | CONTROL | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GOVERNOR | | SPEED | | | | | GEARSET | | | | | | | | | | | |
| Type | Drive | Motor in r.p.m. | Truck in m.p.h. | Carbureter Make | Lubrication | Clutch Type | Type | Location | Speeds | Total Gear Reduction in High | Final Drive | Torque Taken By | Propulsion Taken By | Front | Rear | Steer | Levers | Name and Model |
| ..... | ..... | ..... | ..... | Holley | spl-press | cone | selec | unit-j | 3 | ..... | dbl chn | ..... | rad-rd | ½-ell | plat | left | cent | Sullivan G |
| ..... | ..... | ..... | ..... | Holley | spl-press | dry-p | selec | unit-m | 3 | ..... | top worm | springs | springs | ½-ell | ½-ell | left | cent | Sullivan E |
| suct | motor | 1,200 | 17 | Stromberg | circ-spl | dry-d | selec | unit-m | 3 | 7.00 –1 | int-gear | springs | springs | ½-ell | ½-ell | left | cent | Superior A |
| suct | motor | 1,100 | 15 | Stromberg | circ-spl | dry-d | selec | unit-m | 3 | 7.75 –1 | int-gear | springs | springs | ½-ell | ½-ell | left | cent | Superior C |
| cent | motor | 1,000 | 15½ | Schebler | spl-press | cone | selec | unit-m* | 3 | 9.60 –1 | int-gear* | tor-arm | rad-rd | ½-ell | ½-ell | left | cent | Tiffin A-AC |
| cent | motor | 1,000 | 15 | Schebler | spl-press | cone | selec | unit-m | 3 | 9.60 –1 | int-gear | tor-arm | rad-rd | ½-ell | ½-ell | left | cent | Tiffin AI |
| cent | motor | 1,000 | 13½ | Schebler | spl-press | cone | selec | unit-m* | 3 | 8.00 –1 | int-gear* | tor-arm | rad-rd | ½-ell | ½-ell | left | cent | Tiffin GI-GC |
| cent | motor | 1,000 | 12 | Schebler | spl-press | cone | selec | amid* | 3 | 8.80 –1 | top worm* | tor-arm | rad-rd | ½-ell | ½-ell | left | cent | Tiffin MW-MC |
| cent | motor | 1,000 | 10 | Schebler | spl-press | dry-p | selec | amid* | 4 | 12.20 –1 | top worm* | tor-arm | rad-rd | ½-ell | ½-ell | left | cent | Tiffin RW-R |
| cent | motor | 1,000 | 10 | Schebler | spl-press | dry-p | selec | amid* | 4 | 12.20 –1 | top worm* | tor-arm | rad-rd | ½-ell | ½-ell | left | cent | Tiffin SW-S |
| ..... | ..... | 1,200 | 15 | Stromberg | circ-spl | dry-d | selec | unit-m | 3 | 8.75 –1 | top worm | springs | springs | ½-ell | ½-ell | left | cent | Tower |
| cent | motor | 1,200 | 16 | Rayfield | circ-spl | wet-d | selec | unit-j | 3 | 7.50 –1 | dbl chn | ..... | rad-rd | ½-ell | ½-ell | right | right | Transit E |
| cent | motor | 1,200 | 14 | Rayfield | circ-spl | wet-d | selec | unit-j | 3 | 9.00 –1 | dbl chn | ..... | rad-rd | ½-ell | ½-ell | right | right | Transit F |
| cent | motor | 1,200 | 12 | Rayfield | circ-spl | wet-d | selec | unit-j | 3 | 10.00 –1 | dbl chn | ..... | rad-rd | ½-ell | ½-ell | right | right | Transit T |
| cent | motor | 1,200 | 10 | Rayfield | circ-spl | wet-d | ind-c | unit-j | 3 | 13.00 –1 | dbl chn | ..... | rad-rd | ½-ell | ½-ell | right | right | Transit V |
| cent | d-shaft | 1,300 | 10 | Zenith | circ-spl | dry-d | selec | unit-m | 3 | 13.60 –1 | top worm | springs | springs | ½-ell | ½-ell | left | cent | Transport Tractor T |
| none | none | 2,200 | 45 | Zephyr | circ-spl | dry-d | selec | unit-x | 3 | 3.60 –1 | bevel | tor-t | tor-t | ½-ell | cant | left* | cent | Trumbull 16D |
| ..... | ..... | 1,500 | 15 | Schebler | circ-spl | dry-d | plan | unit-j | 2 | 10.00 –1 | dbl chn | ..... | rad-rd | ½-ell | ½-ell | right | right | Twin City |
| ..... | ..... | 1,500 | 15 | Schebler | circ-spl | dry-d | prog | unit-j | 3 | 10.00 –1 | dbl chn | ..... | rad-rd | ½-ell | ½-ell | right | right | Twin City |
| cent | motor | 1,160 | 15 | opt | circ-spl | dry-p | selec | unit-m | 3 | 7.83 –1 | top worm | tor-arm | rad-rd | ½-ell | ½-ell | left | cent | Universal G |
| l-b | motor | 1,123 | 13 | ..... | circ-spl | cone | selec | amid | 3 | 9.25 –1 | dbl chn | ..... | rad-rd | ½-ell | ½-ell | left | ..... | Universal D |
| cent | motor | 1,057 | 10½ | opt | circ-spl | cone | selec | unit-j | 3 | 10.33 –1 | dbl chn | ..... | rad-rd | ½-ell | ½-ell | left | ..... | Universal A |
| suct | motor | ..... | 18 | Stromberg | spl-press | dry-d | selec | unit-m | 3 | ..... | top worm | springs | springs | ½-ell | ½-ell | left | cent | United AG |
| suct | motor | 1,500 | 15 | Stromberg | spl-press | dry-d | selec | unit-m | 3 | 8.75 –1 | top worm | springs | springs | ½-ell | ½-ell | left* | cent | United BSW |
| suct | motor | 1,600 | 12 | Stromberg | spl-press | dry-d | selec | unit-m | 3 | 8.75 –1 | top worm | springs | springs | ½-ell | ½-ell | left* | cent | United CSW |
| cent | d-shaft | 1,800 | 10 | Stromberg | spl-press | dry-d | selec | amid | 4 | 11.75 –1 | top worm | springs | springs | ½-ell | ½-ell | right | right | United ESW |
| cent | motor | 1,200 | 15 | Stromberg | circ-spl | cone | ind-c | amid | 3 | 8.66 –1 | top worm | springs | springs | ½-ell | ½-ell | left* | cent | U. S H |
| cent | motor | 1,170 | 12 | Stromberg | circ-spl | cone | ind-c | amid | 3 | 11.70 –1 | top worm | springs | springs | ½-ell | ½-ell | left* | cent | U. S J |
| cent | motor | 1,196 | 11 | Stromberg | circ-spl | cone | ind-c | amid | 3 | 13.00 –1 | top worm | springs | springs | ½-ell | ½-ell | left* | cent | U. S K |
| cent | motor | 1,000 | 18 | Stromberg | spl-press | dry-d | selec | amid | 4 | 6.80 –1 | top worm | springs | springs | ½-ell | ½-ell | right | right | Velie 25 |
| cent | motor | 1,100 | 14 | Stromberg | spl-press | dry-d | selec | amid | 4 | 10.30 –1 | top worm | tor-arm | rad-rd | ½-ell | ½-ell | right | right | Velie 26 |
| none | none | 1,230 | 25 | Stromberg | spl-press | cone | selec | unit-m | 3 | 4.50– 1 | bevel | springs | springs | ½-ell | ½-ell | left | cent | Vim 18 |
| cent | motor | 1,000 | 15 | Rayfield | circ-spl | wet-d | selec | unit-j | 3 | 6.60 –1 | dbl chn | ..... | rad-rd | plat | plat | left | cent | Voltz C |
| cent | motor | 1,000 | 13 | Rayfield | circ-spl | wet-d | selec | unit j | 3 | 7.59 –1 | dbl chn | ..... | rad rd | plat | plat | left | cent | Voltz T |
| cent | motor | 1,200 | 15½ | Stromberg | circ spl | cone | selec | unit j | 3 | 7.87 –1 | dbl chn | ..... | rad rd | ½-ell | ½-ell | right | right | Vulcan |
| cent | motor | 1,200 | 15½ | Stromberg | circ-spl | cone | selec | unit-j | 3 | 7.87 –1 | dbl chn | ..... | rad-rd | ½-ell | ½-ell | right | right | Vulcan |
| cent | motor | 1,200 | 10 | Stromberg | circ-spl | cone | selec | unit-j | 3 | 12.80 –1 | dbl chn | ..... | rad-rd | ½-ell | ½-ell | right | right | Vulcan |
| cent | motor | ..... | ..... | Zenith | circ-spl | cone | selec | unit-m | 4 | ..... | spur-g-4 | springs | springs | ½-ell | ½-ell | left | cent | Walter |
| cent | motor | ..... | ..... | Zenith | circ-spl | cone | selec | unit-m | 4 | ..... | spur-g-4 | springs | springs | ½-ell | ½-ell | left | cent | Walter |
| cent | motor | ..... | ..... | Zenith | circ-spl | cone | selec | unit-m | 4 | ..... | spur-g-4 | springs | springs | ½-ell | ½-ell | left | cent | Walter |
| cent | motor | ..... | ..... | Zenith | circ-spl | cone | selec | unit-m | 4 | ..... | spur-g-4 | springs | springs | ½-ell | ½-ell | left | cent | Walter Tractor |
| cent | motor | ..... | 14 | Zenith | circ-spl | cone | selec | unit-m | 4 | ..... | spur-g-f | springs | springs | ½-ell | coil | left | cent | Watson |
| none | none | ..... | ..... | White | spl-press | wet-p | selec | amid | 4 | ..... | bevel | springs | rad-rd | ½-ell | ½-ell | left | c & l | White GBBE |
| none | none | ..... | ..... | White | spl-press | wet-p | selec | amid | 4 | ..... | doub-red | springs | rad-rd | ½-ell | ½-ell | left | c & l | White TBC |
| none | none | ..... | ..... | White | spl-press | wet-p | selec | amid | 4 | ..... | dbl chn | ..... | rad-rd | ½-ell | ½-ell | left | c & l | White TAD |
| none | none | ..... | ..... | White | spl-press | wet-p | selec | amid | 4 | ..... | dbl chn | ..... | rad-rd | ½-ell | ½-ell | left | c & l | White TCD |
| none | none | 1,080 | 15 | Stromberg | spl-press | cone | selec | unit-j | 3 | 7.32 –1 | dbl chn | ..... | rad-rd | ½-ell | ½-ell | right | cent | Wichita A |
| none | none | 1,085 | 15 | Stromberg | spl-press | cone | selec | amid | 3 | 7.80 –1 | top worm | springs | springs | ½-ell | ½-ell | right | cent | Wichita K |
| none | none | 1,200 | 15 | Stromberg | spl-press | cone | selec | amid | 3 | 8.66 –1 | top worm | springs | springs | ½-ell | ½-ell | right | cent | Wichita L |
| none | none | 1,050 | 13 | Stromberg | spl-press | cone | selec | unit-j | 3 | 8.24 –1 | dbl chn | ..... | rad-rd | ½-ell | ½-ell | right | cent | Wichita B |
| none | none | 1,280 | 13 | Stromberg | spl-press | cone | selec | amid | 3 | 10.67 –1 | top worm | springs | springs | ½-ell | ½-ell | right | ..... | Wichita M |
| cent | motor | 1,200 | 11 | Stromberg | circ-spl | cone | selec | amid | 3 | 11.75 –1 | top worm | springs | springs | ½-ell | ½-ell | right | ..... | Wichita O |
| cent | motor | 1,500 | 20 | opt | circ-spl | dry-d | selec | unit-m | 3 | 6.00 –1 | bevel | tor-t | tor-t | ½-ell | ½-ell | left | cent | Wilcox T |
| cent | motor | 1,500 | 20 | opt | circ-spl | dry-d | selec | unit-m | 3 | 6.20 –1 | top worm | springs | springs | ½-ell | ½-ell | left | cent | Wilcox N |
| cent | motor | 1,500 | 18 | opt | circ-spl | dry-d | selec | unit-m | 3 | 6.50 –1 | top worm | springs | springs | ½-ell | ½-ell | left | cent | Wilcox S |
| cent | motor | 1,000 | 16 | opt | circ-spl | cone | selec | amid | 3 | 7.70 –1 | top worm | springs | springs | ½-ell | ½-ell | left | cent | Wilcox R |
| cent | motor | 1,008 | 18 | Zenith | circ-spl | dry-d | selec | unit-m | 3 | 6.00 –1 | top worm | springs | springs | ½-ell | ½-ell | left | cent | Witt-Will WD1 |
| cent | motor | 1,085 | 15 | Zenith | circ-spl | dry-d | selec | unit-m | 3 | 7.75 –1 | top worm | springs | springs | ½-ell | ½-ell | left | cent | Witt-Will WD2 |

## Received Too Late to Classify

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| cent | motor | 1,200 | 18 | Schebler | circ-spl | dry-d | selec | unit-m | 4 | ..... | top worm | springs | springs | ½-ell | ½-ell | right | cent | Acason |
| cent | motor | 1,200 | 15 | Schebler | circ-spl | dry-d | selec | unit-m | 4 | ..... | top worm | springs | springs | ½-ell | ½-ell | right | cent | Acason |
| cent | motor | 1,200 | 15 | Carter | spl-press | dry-p | selec | unit-m | 3 | 7.75 –1 | top worm | tor-t | rad-rd | ½-ell | ½-ell | left | cent | Mogul LM |
| cent | motor | 1,200 | 15 | Carter | spl-press | dry p | selec | unit-m | 3 | 7.75 –1 | top worm | tor-t | rad-rd | ½-ell | ½-ell | left | cent | Mogul LW |
| cent | motor | 1,200 | 15 | Carter | spl-press | dry-p | selec | amid | 3 | 7.75 –1 | dbl chn | ..... | rad-rd | ½-ell | ½-ell | left | cent | Mogul L |
| cent | motor | 1,200 | 15 | Carter | spl-press | ..... | selec | amid | 3 | 7.75 –1 | dbl chn | ..... | rad-rd | ½-ell | ½-ell | left | cent | Mogul T |
| cent | motor | 700 | 5 | Kingston | splash | exp-s | ind-c | unit-j | 3 | ..... | int-gear | springs | ..... | coil | coil | right | ..... | Phoenix Centiped |
| cent | motor | 1,200 | 15 | ..... | circ-spl | cone | selec | amid | 3 | ..... | top worm | springs | springs | ½-ell | ½-ell | left | cent | Wilson E |

ABBREVIATIONS: (continued). **Governor Type,** cent, *centrifugal;* l-b, *loose-ball;* suct, *suction;* hyd, *hydraulic;* elec, *electric.* **Governor Drive,** motor, *from motor;* d-shaft, *from driving shaft;* f-wheel, *from front wheel;* duplex, *from both the motor and driving shaft by overrunning clutches.* **Lubrication,** splash, *non-circulating or simple splash;* circ-spl, *circulating splash;* spl-press, *splash-pressure;* fuel-inj, *fuel injection, oil mixed with fuel;* pressure, *pressure feed, no splash.* **Clutch Type,** dry-p, *dry plate;* dry-d, *dry multiple disk;* wet-d, *wet disk or disk-in-oil;* wet-p, *wet plate or plate-in-oil;* r-cone, *reversed cone or inverted cone;* cont-b, *contracting band;* exp-s, *expanding shoe.* **Gearset Type,** prog, *progressive sliding gear;* selec, *selective sliding gear;* plan, *planetary;* ind-c, *constant-mesh, individual-clutch;* fric, *friction;* elec, *electric.* **Gearset Location,** amid, *amidships;* unit-m, *unit with motor;* unit-j, *unit with jackshaft;* unit-x, *unit with axle.* **Gearset Speeds,** inf, *infinite number.* **Final Drive,** int-g, int-gear, *internal-gear;* sing chn, *single chain;* dbl chn, *double chain;* doub-red, *double reduction;* spur-g, *spur gears;* sp-bev, *spiral bevel;* f, *front wheel or wheels;* 4, *four-wheel driven.* **Torque Taken By,** rad-rd, *radius rods;* tor-arm, *torque arm;* tor-t, *torsion tube;* sub-f, *sub-frame.* **Propulsion Taken By,** rad-rd, *radius rod;* tor-t, *torsion tube;* tor-arm, *torque arm;* sub-f, *sub-frame.* **Springs,** ellip, *elliptic;* ½-ell, *half elliptic;* ¼-ell, *quarter elliptic;* ¾-ell, *three-quarter elliptic;* plat, *platform;* cant, *cantilever.* **Control, Levers,** cent, *center;* c & r, *gearshift center, brake right;* c & l, *gearshift center, brake left.*

# Chassis Specifications of the Fifty-three 1916

## Annual Tabulation of the Details of Chassis, Motor Equipment and Eight Manufacturers for the New Season, Arranged

Realizing that the fields of the gasoline and electric commercial vehicle differ to so great an extent that inclusion in one list might prove confusing if the reader sought to compare different makes of either electric or gasoline motor trucks, the electric has been segregated from the latter and below is offered a tabulation showing the specifications of fifty-three models of the electric type, made by eight manufacturers.

In this list is given details of chassis, price, wheelbase, battery data that includes the number of plates and cells per battery, the arrangement in trays and the ampere hour capacity. The mileage per charge is given that ready comparison may be made. Motor data covers the location, make and winding as well as the horsepower and voltage, together with the speed, both loaded and light.

The location of control and the number of speeds, gear-reductions, first, final and total, as well as the final drive is covered. In fact, every point upon which question might arise in the minds of the user or dealer is more or less fully covered. At the bottom of these two pages is given a glossary of the terms used in the tables, which explains the abbreviations.

The different cars are grouped and arranged so that each make occupies a separate group and each model a separate line. Occasionally there will be found a blank, which is accounted for by the fact

| Name and Model | Load Capacity in Pounds | PRICE OF CHASSIS | | Wheelbase in Inches | TIRES | | | BATTERY | | | | | | | MOTOR | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | With Battery | Without Battery | | Kind | SIZES IN INCHES Front | SIZES IN INCHES Rear | Location | Make and Type | No. Plates | No. Cells | No. Trays | Amp.-Hr. Capacity | MILES PER CHARGE Light | MILES PER CHARGE Loaded | Location and Number | Make | Winding |
| Baker X | 1,000 | 1,900 | ..... | 86 | solid | 36x3 | 36x3 | amid-u | Exide MV* | 9* | 42* | 6* | 112* | 65* | 45* | rear 1 | G.E. | series |
| Baker O | 2,000 | 2,300 | ..... | 102 | solid | 36x3½ | 36x3½ | amid u | Exide MV* | 11* | 42* | 7 | 140* | 55* | 40* | rear 1 | G.E. | series |
| Baker U | 4,000 | 2,800 | ..... | 120 | solid | 36x4 | 36x3d | amid u | Exide MV* | 13* | 42* | 6 | 168* | 53* | 40* | rear 1 | G.E. | series |
| Baker CC | 7,000 | 3,500 | ..... | 137 | solid | 36x6 | 38x4d | amid u | Exide MV* | 17* | 42* | 6 | 224* | 50* | 40* | rear 1 | G.E. | series |
| Baker EA | 10,000 | 3,850 | ..... | 137 | solid | 36x7 | 38x5d | amid u | Exide MV* | 19* | 42* | 6 | 252* | 40* | 35* | rear 1 | G.E. | series |
| Connorsville | 750 | 750 | 600 | 80 | solid | ..... | ..... | rear u & h | Philadelphia* | 17 | 16 | 2 | 204 | ..... | ..... | ....1 | G.E. | series |
| Couple-Gear Tractor HF1 | 4,000 | 2,250 | 1,850 | 80 | solid | 36x5 | 30x3½ | amid-u | U.S.L.-WBT | 15 | 40 | 4 | 175 | 30 | 25 | in wheel-1 | Couple-Gear | series |
| Couple-Gear H | 7,000 | 4,200 | 3,600 | 96 | solid | 36x4d | 36x4d | amid-u | U.S.L.-WBT | 25 | 44 | 6 | 275 | 40 | 30 | in wheel-4 | Couple-Gear | series |
| Couple-Gear A | 10,000 | 4,800 | 4,100 | 98 | solid | 36x5d | 36x5d | amid-u | U.S.L.-WBT | 27 | 44 | 6 | 300 | 35 | 25 | in wheel-4 | Couple-Gear | series |
| Couple-Gear AF | 12,000 | 3,800 | 3,200 | 110* | s & st | 36x5d | 60x5 | amid-u | U.S.L.-WBT | 29 | 48 | 6 | 325 | 40 | 35 | in wheel-2 | Couple-Gear | series |
| C.T. | 1,000 | ..... | 1,640 | 90* | solid | 36x2½ | 36x3 | amid-u | Edison-A4* | ..... | 60* | 6* | 150* | ..... | ..... | unit-x-2 | G.E. | series |
| C.T. | 2,000 | ..... | 2,095 | 100* | solid | 36x3½ | 36x4 | amid-u | Edison-A6* | ..... | 60* | 6* | 225* | ..... | ..... | unit-x-2 | G.E. | series |
| C.T. | 4,000 | ..... | 2,725 | 116 | solid | 36x5 | 36x3½d | amid-u | Edison-A8* | ..... | 60* | 8* | 300* | ..... | ..... | unit-x-2 | G.E. | series |
| C.T. | 7,000 | ..... | 3,530 | 115* | solid | 36x3½d | 36x4d | amid-u | Edison-A10* | ..... | 60* | 8* | 375* | ..... | ..... | unit-x-4 | G.E. | series |
| C.T. | 10,000 | ..... | 3,935 | 132* | solid | 36x4d | 36x5d | amid-u | Edison-A12* | ..... | 60* | 8* | 450* | ..... | ..... | unit-x-4 | G.E. | series |
| G.M.C. 1 | 1,000 | 1,580 | 1,200 | 106* | solid | 32x3 | 32x3½ | amid-o | Edison-A4* | ..... | 60* | ..... | 150* | 50* | 45* | rear-1 | G.E. | series |
| G.M.C. 2 | 2,000 | 1,740 | 1,300 | 118* | solid | 32x3½ | 32x4 | amid-o | Edison-A5* | ..... | 60* | ..... | 187.5* | 50* | 42* | rear-1 | G.E. | series |
| G.M.C. 3 | 3,000 | 1,940 | 1,450 | 130* | solid | 32x4 | 32x5 | amid-o | Edison-A6* | ..... | 60* | ..... | 225* | 50* | 40* | rear-1 | G.E. | series |
| G.M.C. 4 | 4,000 | 2,200 | 1,650 | 138* | solid | 32x4 | 32x3½d | amid-o | Edison-A6* | ..... | 60* | ..... | 225* | 40* | 32* | rear-1 | G.E. | series |
| G.M.C. 7 | 7,000 | 2,600 | 2,000 | 150* | solid | 32x5 | 36x4d | amid-o | Edison-A8* | ..... | 60* | ..... | 300* | 41* | 32* | rear-1 | G.E. | series |
| G.M.C. 10 | 10,000 | 3,060 | 2,350 | 166* | solid | 36x6 | 36x6d | amid-o | Edison-A10* | ..... | 60* | ..... | 375* | 35* | 27* | rear-1 | G.E. | series |
| G.M.C. 12 | 12,000 | 3,720 | 2,500 | 174* | solid | 36x6 | 36x7d | amid-o | Edison-A10* | ..... | 60 | ..... | 375* | 32* | 24* | rear-1 | G.E. | series |
| G.V. | 1,000 | ..... | ..... | 88½ | solid | 36x2½ | 36x2½ | amid-u | Philadelphia WTX* | 13* | 44* | 4* | 153* | ..... | 50*† | rear-1 | G.E. | series |
| G.V. | 1,000 | ..... | ..... | 107½ | solid | 36x3 | 36x3 | u-hood | Philadelphia WTX* | 15* | 44* | 4* | 178.5* | ..... | 65*† | amid-1 | G.E. | series |
| G.V. | 2,000 | ..... | ..... | 103 | solid | 36x3½ | 36x3½ | amid-u | Philadelphia WTX* | 17* | 44* | 5* | 204* | ..... | 55*† | rear-1 | G.E. | series |
| G.V. | 4,000 | ..... | ..... | 111½ | solid | 36x4 | 36x3d | amid-u | Philadelphia WTX* | 21* | 44* | 6 | 225* | ..... | 55*† | rear-1 | G.E. | series |
| G.V. | 7,000 | ..... | ..... | 184 | solid | 36x6 | 36x6d | amid-u | Philadelphia WTX* | 27* | 44* | 6 | 331* | ..... | 50*† | rear-1 | G.E. | series |
| G.V. | 10,000 | ..... | ..... | 139 | solid | 36x7 | 36x5d | amid-u | Philadelphia WTX* | 31* | 44* | 6 | 382* | ..... | 45*† | rear-1 | G.E. | series |
| Lansden S | 750 | 1,850 | 1,175 | 90 | cush | 34x3 | 34x4 | u-seat | Edison-A4 | ..... | 60 | 10 | ..... | ..... | 60 | unit-x-1 | G.E. | series |
| Lansden M | 1,000 | 2,310 | 1,500 | 90 | solid | 36x2½ | 36x3 | amid-u | Edison-A4 | ..... | 60 | 10 | ..... | ..... | 60 | unit-j-1 | G.E. | series |
| Lansden M | 2,000 | 2,900 | 1,700 | 106 | solid | 36x3 | 36x3½ | amid-u | Edison-A6 | ..... | 60 | 10 | ..... | ..... | 60 | unit-j-1 | G.E. | series |
| Lansden M | 4,000 | 3,660 | 2,100 | 120 | solid | 36x4 | 36x3d | amid-u | Edison-A8 | ..... | 60 | 10 | ..... | ..... | 50 | unit-j-1 | G.E. | series |
| Lansden M | 7,000 | 4,455 | 2,475 | 130 | solid | 36x5 | 36x4d | amid-u | Edison-A10 | ..... | 60 | 10 | ..... | ..... | 50 | unit-j-1 | G.E. | series |
| Lansden M | 10,000 | 5,190 | 2,850 | 142 | solid | 36x6 | 36x5d | ..... | Edison-A12 | ..... | 60 | 10 | ..... | ..... | 50 | unit-j-1 | G.E. | ..... |
| Lansden Tractor | 20,000 | 3,660 | 2,100 | 58 | solid | 30x4 | 30x5 | amid-o | Edison A8 | ..... | 60 | 10 | ..... | ..... | 60 | rear-1 | G.E. | series |
| Walker M | 1,000 | ..... | ..... | 90* | solid | 34x3 | 36x3½ | amid-u | opt | ..... | ..... | ..... | ..... | ..... | ..... | unit-x-1 | Westinghouse | series |
| Walker K | 2,000 | ..... | ..... | 92* | solid | 34x3½ | 34x4 | amid-u | opt | ..... | ..... | ..... | ..... | ..... | ..... | unit-x-1 | Westinghouse | series |
| Walker L | 4,000 | ..... | ..... | 107* | solid | 38x4 | 38x6 | amid-u | opt | ..... | ..... | ..... | ..... | ..... | ..... | unit-x-1 | Westinghouse | series |
| Walker D | 6,000 | ..... | ..... | 126* | solid | 36x5 | 38x5 | amid-u | opt | ..... | ..... | ..... | ..... | ..... | ..... | unit-x-1 | Westinghouse | series |
| Walker E | 8,000 | ..... | ..... | 130* | solid | 36x6 | 38x5d | amid-u | opt | ..... | ..... | ..... | ..... | ..... | ..... | unit-x-1 | Westinghouse | series |
| Walker N | 10,000 | ..... | ..... | 130* | solid | 36x7 | 38x6d | amid-u | opt | ..... | ..... | ..... | ..... | ..... | ..... | unit-x-1 | Westinghouse | series |
| Walker Tractor DK | 20,000 | ..... | ..... | 74* | solid | 34x4 | 38x6* | rear-o | opt | ..... | ..... | ..... | ..... | ..... | ..... | unit-x-1 | Westinghouse | series |
| Ward WS | 750 | ..... | ..... | 88 | solid | 32x2½ | 32x2½ | u-seat | ..... | 9 | 42 | 3 | 100 | ..... | 45 | amid-1 | ..... | series |
| Ward EO | 1,000 | ..... | ..... | 90 | solid | 32x2½ | 34x3 | amid-u | ..... | 11 | 42 | 3 | 127 | ..... | 45 | amid-1 | ..... | series |
| Ward EA | 2,000 | ..... | ..... | 99 | solid | 34x3 | 36x4 | amid-u | ..... | 13 | 42 | ..... | 153 | ..... | 40 | amid-1 | ..... | series |
| Ward EB | 4,000 | ..... | ..... | 111 | solid | 36x4 | 38x6 | amid-u | ..... | 17 | 42 | ..... | 204 | ..... | 35 | amid-1 | ..... | series |
| Ward EC | 7,000 | ..... | ..... | 132 | solid | 38x6 | 40x3½d | amid-u | ..... | 23 | 42 | ..... | 280 | ..... | 30 | amid-1 | ..... | series |
| Ward ED | 10,000 | ..... | ..... | 159 | solid | 40x3½d | 42x5d | amid-u | ..... | 29 | 42 | ..... | 357 | ..... | 25 | amid-1 | ..... | series |
| Waverley 83 | 1,000 | 1,800 | 1,575 | 90 | cush | 34x2½ | 34x2½ | amid-u | Exide* | 11 | 42 | 6 | ..... | ..... | 50 | rear-1 | Waverley | series |
| Waverley | 2,000 | 2,150 | ..... | 104 | solid | 35x5 | 35x5 | amid-u | Exide* | 15 | 42 | ..... | ..... | ..... | 45 | rear-1 | G.E. | series |
| Waverley | 4,000 | 3,000 | ..... | 114 | solid | 37x5 | 37x4d | amid-u | Exide* | 17 | 42 | ..... | ..... | ..... | 35 | rear-1 | G.E. | series |
| Waverley | 7,000 | 3,400 | ..... | 127 | solid | 37x6 | 37x5d | amid-u | Exide* | 21 | 42 | ..... | ..... | ..... | 35 | rear-1 | G.E. | series |
| Waverley | 10,000 | 3,950 | ..... | 136 | solid | 37x7 | 37x7d | amid-u | Exide* | 25 | 42 | ..... | ..... | ..... | ..... | rear-1 | G.E. | series |

**ABBREVIATIONS: General,** *, *with other options;* opt, *optional.* **Tires, Kind,** cush, *cushion;* s & st, *solid in front and steel in rear.* **Tire Sizes,** d, *dual.* **Battery, Location,** amid-u, *amidships, underslung below frame;* amid-o, *amidships over frame;* rear-o, *at rear, over frame;* rear-u & h, *at rear under frame and also under a hood forward;* u-hood, *under hood;* front-u, *in front, under frame;* u-seat, *under seat;* ends-o, *at both ends, over frame.* **Battery, Make and Type,** Exide-lr, *Exide-Ironclad type.* **Miles per Charge, Loaded,** †, *half way light, half loaded.* **Motor, Location and Number,** amid, *amidships;* unit-j, *unit with jackshaft;* unit-x, *unit with axle.* Numbers following *refer to number of motors in chassis.*

# American Electric Commercial Vehicle Types

## Batteries of Domestic Electric Motor Trucks and Tractors, Made by ... for Convenient Comparison and Easy Study

that the manufacturer failed to furnish Motor Age with official information covering that particular point of his product.

While the electric truck is more especially a vehicle for city use, its utility has been rolling up until it now occupies a prominent place in a specialized field. Where current is available for charging, the electrically-driven car has forged ahead rapidly in the last year or two.

The segregation of this particular line will give dealers an opportunity to study and compare the various makes and models as well as give the users, prospective or otherwise, an authentic source of information.

The details given are fairly comprehensive, covering, in addition to the points already mentioned, the method of propulsion, the type of springs, etc.

These pages should be preserved for future reference and will prove of material advantage during the coming year.

Not only is it desirable for the truck user to have at his fingers' ends the engineering data he naturally desires when adding to his line of motor-driven equipment, but it is always well to use discretion in buying, this applying to the purchase of trucks as well as of any other commodity used in every-day practice. The truck user will find it much more economical to get a truck that fits his requirement than to have to fit his requirements to the truck and the following data is to guide him in making a choice.

| MOTOR | | | | CONTROLLER | | | DRIVE | | | | | | SPRINGS | | CONTROL | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Horse-power | Volt-age | SPEED IN MILES PER HOUR | | Location | SPEEDS | | GEARING | | Total Gear Ratio | Torque Taken By | Propulsion Taken By | | Front | Rear | Steer | Controller Lever | Name and Model |
| | | Light | Loaded | | F'w'd | Rear | First Reduction | Final Reduction | | | | | | | | | |
| 3 | 80 | 14½ | 13 | u-seat | 5 | 3 | s-chain | dbl chn | 10.60–1 | | rad-rd | | ½-ell | ½-ell | wheel-l | u-wheel | Baker X |
| 3½ | 85 | 12½ | 10½ | u-seat | 5 | 3 | s-chain | dbl chn | 10.00–1 | | rad-rd | | ½-ell | ½-ell | wheel-l | u-wheel | Baker O |
| 4 | 85 | 10 | 9 | u-seat | 5 | 3 | s-chain | dbl chn | 14.00–1 | | rad-rd | | ½-ell | ½-ell | wheel-l | u-wheel | Baker U |
| 4½ | 85 | 9 | 8 | u-seat | 5 | 3 | s-chain | dbl chn | 16.20–1 | | rad-rd | | ½-ell | ½-ell | wheel-l | u-wheel | Baker CC |
| 5 | 85 | 8 | 7 | u-seat | 5 | 3 | s-chain | dbl chn | 19.00–1 | | rad-rd | | ½-ell | ½-ell | wheel-l | u-wheel | Baker EA |
| | | 14 | | | 4 | 2 | none | herring | | tor-t | | | ½-ell | ½-ell | lever-l | l-seat | Connorsville |
| 3 | 80 | 10 | 7 | btw seats | 4 | 4 | none | bevel-f | 25.00–1 | springs | springs | | ½-ell | ½-ell | wheel-r | btw seats | Couple-Gear Tractor HF1 |
| 12 | 88 | 10 | 8 | btw seats | 5 | 5 | none | bevel-4 | 25.00–1 | tor-arm | rad-rd | | ½-ell | ½-ell | wheel-r | btw seats | Couple-Gear H |
| 12 | 88 | 8 | 7 | btw seats | 5 | 5 | none | bevel-4 | 25.00–1 | tor-arm | rad-rd | | ½-ell | ½-ell | wheel-r | btw seats | Couple-Gear A |
| 6 | 96 | 7 | 6 | btw seats | 4 | 4 | none | bevel-f | 25.00–1 | tor-arm | rad-rd | | ½-ell | ½-ell | wheel-r | btw seats | Couple-Gear AF |
| 2½ | 60* | 15 | 13 | u-floor | 4 | 2 | spur gear | spur gear | 10.00–1 | springs | rad-rd | | ¾-ell | ½-ell | wheel-l | u-wheel | C.T. |
| 3½ | 60* | 14 | 12 | u-floor | 4 | 2 | spur gear | spur gear | 11.50–1 | springs | rad-rd | | ½-ell | ½-ell | wheel-l | u-wheel | C.T. |
| 5 | 60* | 12 | 10 | u-floor | 4 | 2 | spur gear | spur gear | 12.14–1 | springs | rad-rd | | ½-ell | ½-ell | wheel-l | u-wheel | C.T. |
| 7 | 60* | 11 | 9 | u-floor | 4 | 2 | spur gear | spur gear-4 | 17.32–1 | springs | rad-rd | | ½-ell | ½-ell | wheel-l | u-wheel | C.T. |
| 7 | 60* | 9 | 7 | u-floor | 4 | 2 | spur gear | spur gear-4 | 20.14–1 | springs | rad-rd | | ½-ell | ½-ell | wheel-l | u-wheel | C.T. |
| 2½ | 60* | | 13 | u-hood | 5 | 1 | bevel | dbl chn | 8.40–1 | | rad-rd | | ½-ell | ½-ell | wheel-l | t-wheel | G.M.C. 1 |
| 3½ | 60* | | 12 | u-hood | 5 | 1 | bevel | dbl chn | 11.00–1 | | rad-rd | | ½-ell | ½-ell | wheel-l | t-wheel | G.M.C. 2 |
| 4 | 60* | | 11 | u-hood | 5 | 1 | bevel | dbl chn | 12.20–1 | | rad-rd | | ½-ell | ½-ell | wheel-l | t-wheel | G.M.C. 3 |
| 4 | 60* | | 10 | u-hood | 5 | 1 | bevel | dbl chn | 12.20–1 | | rad-rd | | ½-ell | ½-ell | wheel-l | t-wheel | G.M.C. 4 |
| 5½ | 60* | | 8 | u-hood | 5 | 1 | bevel | dbl chn | 12.70–1 | | rad-rd | | ½-ell | ½-ell | wheel-l | t-wheel | G.M.C. 7 |
| 7 | 60* | | 7½ | u-hood | 5 | 1 | bevel | dbl chn | 15.70–1 | | rad-rd | | ½-ell | ½-ell | wheel-l | t-wheel | G.M.C. 10 |
| 7 | 60* | | 6½ | u-hood | 5 | 1 | bevel | dbl chn | 15.70–1 | | rad-rd | | ½-ell | ½-ell | wheel-l | t-wheel | G.M.C. 12 |
| 2 | 85* | 14 | 12 | u-seat | 5 | 2 | s-chain | dbl chn | 14.89–1 | | rad-rd | | ½-ell | ½-ell | wheel-l | l-seat | G.V. |
| 2 | 85* | 14 | 12 | u-seat | 5 | 2 | none | top worm | 9.00–1 | springs | springs | | ½-ell | ½-ell | wheel-l | l-seat | G.V. |
| 2½ | 85* | 12 | 10 | u-seat | 5 | 2 | s-chain | dbl chn | 10.76–1 | | rad-rd | | ½-ell | ½-ell | wheel-l | l-seat | G.V. |
| 2½ | 85* | 11 | 9 | u-seat | 5 | 2 | s-chain | dbl chn | 11.61–1 | | rad rd | | ½-ell | ½-ell | wheel-l | l-seat | G.V. |
| 4 | 85* | 10 | 8 | u-seat | 5 | 2 | s-chain | dbl chn | 13.95–1 | | rad-rd | | ½-ell | ½-ell | wheel-l | l-seat | G.V. |
| 5 | 85* | 9 | 7 | u-seat | 5 | 2 | s-chain | dbl chn | 13.95–1 | | rad-rd | | ½-ell | ½-ell | wheel-l | l-seat | G.V. |
| | 60 | | 15 | u-hood | 4 | 2 | spur gear | bevel | 12.00–1 | tor-arm | springs | | ½-ell | ½-ell | wheel-l | u-wheel | Lansden S |
| | 60 | | 12 | u-hood | 4 | 2 | bevel | dbl chn | 8.00–1 | | rad-rd | | ½-ell | ½-ell | wheel-l | u-wheel | Lansden M |
| | 60 | | 10 | u-hood | 4 | 2 | bevel | dbl chn | 10.00–1 | | rad-rd | | ½-ell | ½-ell | wheel-l | u-wheel | Lansden M |
| | 60 | | 9 | u-hood | 4 | 2 | bevel | dbl chn | 13.00–1 | | rad-rd | | ½-ell | ½-ell | wheel-l | u-wheel | Lansden M |
| | 60 | | 7 | u-hood | 4 | 2 | bevel | dbl chn | 13.00–1 | | rad-rd | | ½-ell | ½-ell | wheel-l | u-wheel | Lansden M |
| | 60 | | 6 | u-hood | 4 | 2 | bevel | dbl chn | 14.50–1 | | rad-rd | | ½-ell | ½-ell | wheel-l | u-wheel | Lansden M |
| | 60 | 8 | 5 | u-seat | 4 | 2 | s-chain | dbl chn | 9.00–1 | | rad-rd | | ½-ell | ½-ell | wheel-l | u-wheel | Lansden Tractor |
| | | 15 | 14 | u-seat | 5 | 5 | none | spur gear | 17.00–1 | springs | springs | | ½-ell | ½-ell | wheel-l* | left | Walker M |
| | | 14 | 13 | u-seat | 5 | 5 | none | spur gear | 17.00–1 | springs | springs | | ½-ell | ½-ell | wheel-l* | left | Walker K |
| | | 12 | 12 | u-seat | 5 | 5 | none | spur gear | 17.00–1 | springs | springs | | ½-ell | ½-ell | wheel-l* | left | Walker L |
| | | 11 | 10 | u-seat | 5 | 5 | none | spur gear | 16.00–1 | springs | springs | | ½-ell | ½-ell | wheel-l* | left | Walker D |
| | | 11 | 10 | u-seat | 5 | 5 | none | spur gear | 16.00–1 | springs | springs | | ½-ell | ½-ell | wheel-l* | left | Walker E |
| | | 11 | 10 | u-seat | 5 | 5 | none | spur gear | 16.00–1 | springs | springs | | ½-ell | ½-ell | wheel-l* | left | Walker N |
| | | 8 | 6 | u-seat | 5 | 5 | none | spur gear | | springs | springs | | ½-ell | ½-ell | wheel-l | left | Walker Tractor DK |
| | 80 | | 10 | u-floor | 4 | 2 | none | sp-bev | 6.10–1 | springs | springs | | ½-ell | ½-ell | wheel-l | u-wheel | Ward WS |
| | 80 | | 10 | u-seat | 4 | 2 | s-chain | dbl chn | | | rad-rd | | ½-ell | ½-ell | wheel-l | left | Ward EO |
| | 80 | | 8½ | u-seat | 4 | 2 | s-chain | dbl chn | | | rad-rd | | ½-ell | ½-ell | wheel-l | left | Ward EA |
| | 80 | | 7 | u-seat | 4 | 2 | s-chain | dbl chn | | | rad-rd | | ½-ell | ½-ell | wheel-l | left | Ward EB |
| | 80 | | 6 | u-seat | 4 | 2 | s-chain | dbl chn | | | rad-rd | | ½-ell | ½-ell | wheel-l | left | Ward EC |
| | 80 | | 5 | u-seat | 4 | 2 | s-chain | dbl chn | | | rad-rd | | ½-ell | ½-ell | wheel-l | left | Ward ED |
| 3½ | 85 | | 14 | u-seat | 4 | 4 | s-chain | herring | | springs | springs | | ellip | ellip | wheel-l | left | Waverley 83 |
| | 85 | | 11 | u-seat | 4 | 4 | bevel | dbl chn | | | rad-rd | | ½-ell | ½-ell | wheel-l | left | Waverley |
| | 85 | | 9 | u-seat | 4 | 4 | bevel | dbl chn | | | rad-rd | | ½-ell | ½-ell | wheel-l | left | Waverley |
| | 85 | | 8 | u-seat | 4 | 4 | bevel | dbl chn | | | rad-rd | | ½-ell | ½-ell | wheel-l | left | Waverley |
| | 85 | | 7 | u-seat | 4 | 4 | bevel | dbl chn | | | rad-rd | | ½-ell | ½-ell | wheel-l | left | Waverley |

**ABBREVIATIONS:** (continued). **Controller, Location,** u-seat, *under seat;* u-floor, *under floor of cab;* u-hood, *under hood;* btw seats, *between seats.* **Drive, Gearing, First Reduction,** s-chain, *silent chain.* **Final Reduction,** dbl chn, *double chain;* sp-bev, *spiral bevel gears;* herring, *herringbone gears;* -f, *to front wheels;* -4, *to all four wheels.* **Torque Taken By,** tor-arm, *torque arm;* tor-t, *torsion tube;* sub-f, *sub-frame.* **Propulsion Taken By,** rad-rd, *radius rods;* sub-f, *sub-frame.* **Springs,** ellip, *elliptic;* ½-ell, *half-elliptic;* ¾-ell, *three-quarters-elliptic;* trans-x, *transverse X-shape or reversed elliptic.* **Control, Steer,** -l, *to the left;* -r, *to the right;* -c, *in the center.* **Controller Lever,** u-wheel, *under steering wheel;* t-wheel, *on top of steering wheel;* l-seat, *to left of seat;* btw seats, *between seats;* cent, *center.*

# Buyers' Guide of the Electric Trucks

## Electric Commercial Vehicles Classified as to Load Capacity

THE load capacity of a motor truck is the maximum amount of load it is intended to carry in regular service, in addition to the weight of the body, the cab and the crew. The term does not consider the weight of the unloaded vehicle, but only the load it can carry.

The chassis price is the list price of the chassis, equipped with a standard seat or cab and all other standard equipment except the body, which is usually either selected from a stock of standard bodies or built to order, being charged for extra. Some makers, however, do not sell chassis not equipped with bodies, as indicated in the table by a small c following the price, representing that the price is for the complete vehicle.

Some chassis are not listed with their batteries, as such a wide range of option is given the purchaser on battery equipment that the chassis and the battery are each priced separately. Different batteries sell at widely differing prices, according to make and also according to type and capacity of the same make. Therefore, this year a separate column has been provided for the price without the battery. In cases where a price with the battery is given, this covers only the standard battery shown in the table of electric vehicle specifications that is published on the preceding two pages of this issue. Blank spaces indicate that the maker did not furnish Motor Age sufficient data.

### TRUCKS UNDER ½-TON CAPACITY

| Name and Model | Capacity in Lbs. | Chassis Price: With Battery | Chassis Price: Without Battery | Wh'l-base | Battery Location | Motor Location and Number | Final Drive |
|---|---|---|---|---|---|---|---|
| Connorsville | 750 | $750 | $600 | 80 | rear-u&h. | | herring |
| Lansden S | 750 | 1,850 | 1,175 | 90 | u-seat. | unit-x-1. | bevel |
| Ward WS | 750 | | | 88 | u-seat. | amid-1. | sp-bev |

### TRUCKS OF ½-TON CAPACITY

| Name and Model | Capacity in Lbs. | Chassis Price: With Battery | Chassis Price: Without Battery | Wh'l-base | Battery Location | Motor Location and Number | Final Drive |
|---|---|---|---|---|---|---|---|
| Baker X | 1,000 | 1,900 | | 86 | amid-u. | rear-1. | dbl chn |
| C.T | 1,000 | | 1,640 | 90* | amid-u. | unit-x-2. | spur gear |
| G.M.C 1 | 1,000 | 1,580 | 1,200 | 106* | amid-o. | rear-1. | dbl chn |
| G.V | 1,000 | | | 88½ | amid-u. | rear-1. | dbl chn |
| G.V | 1,000 | | | 107½ | u-hood. | amid-1. | top worm |
| Lansden M | 1,000 | 2,310 | 1,500 | 90 | amid-u. | unit-j-1. | dbl chn |
| Walker M | 1,000 | | | 90* | amid-u. | unit-x-1. | spur gear |
| Ward EO | 1,000 | | | 90 | amid-u. | amid-1. | dbl chn |
| Waverley 83 | 1,000 | 1,800 | 1,575 | 90 | amid-u. | rear-1. | herring |

### TRUCKS OF 1-TON CAPACITY

| Name and Model | Capacity in Lbs. | Chassis Price: With Battery | Chassis Price: Without Battery | Wh'l-base | Battery Location | Motor Location and Number | Final Drive |
|---|---|---|---|---|---|---|---|
| Baker O | 2,000 | 2,300 | | 102 | amid-u. | rear-1. | dbl chn |
| C.T | 2,000 | | 2,095 | 100* | amid-u. | unit-x-2. | spur gear |
| G.M.C 2 | 2,000 | 1,740 | 1,300 | 118* | amid-o. | rear-1. | dbl chn |
| G.V | 2,000 | | | 103 | amid-u. | rear-1. | dbl chn |
| Lansden M | 2,000 | 2,900 | 1,700 | 106 | amid-u. | unit-j-1. | dbl chn |
| Walker K | 2,000 | | | 92* | amid-u. | unit-x-1. | spur gear |
| Ward EA | 2,000 | | | 99 | amid-u. | amid-1. | dbl chn |
| Waverley | 2,000 | 2,150 | | 104 | amid-u. | rear-1. | dbl chn |

### TRUCKS OF 1½-TON CAPACITY

| Name and Model | Capacity in Lbs. | Chassis Price: With Battery | Chassis Price: Without Battery | Wh'l-base | Battery Location | Motor Location and Number | Final Drive |
|---|---|---|---|---|---|---|---|
| G.M.C 3 | 3,000 | 1,940 | 1,450 | 130* | amid-o. | rear-1. | dbl chn |

### TRUCKS OF 2-TON CAPACITY

| Name and Model | Capacity in Lbs. | Chassis Price: With Battery | Chassis Price: Without Battery | Wh'l-base | Battery Location | Motor Location and Number | Final Drive |
|---|---|---|---|---|---|---|---|
| Baker U | 4,000 | 2,800 | | 120 | amid-u. | rear-1. | dbl chn |
| C.T | 4,000 | | 2,725 | 116 | amid-u. | unit-x-2. | spur gear |
| G.M.C 4 | 4,000 | 2,200 | 1,650 | 138* | amid-o. | rear-1. | dbl chn |
| G.V | 4,000 | | | 111½ | amid-u. | rear-1. | dbl chn |
| Lansden M | 4,000 | 3,660 | 2,100 | 120 | amid-u. | unit-j-1. | dbl chn |
| Walker L | 4,000 | | | 107* | amid-u. | unit-x-1. | spur gear |
| Ward EB | 4,000 | | | 111 | amid-u. | amid-1. | dbl chn |
| Waverley | 4,000 | 3,000 | | 114 | amid-u. | rear-1. | dbl chn |

### TRUCKS OF 3-TON CAPACITY

| Name and Model | Capacity in Lbs. | Chassis Price: With Battery | Chassis Price: Without Battery | Wh'l-base | Battery Location | Motor Location and Number | Final Drive |
|---|---|---|---|---|---|---|---|
| Walker D | 6,000 | | | 126* | amid-u. | unit-x-1. | spur gear |

### TRUCKS OF 3½-TON CAPACITY

| Name and Model | Capacity in Lbs. | Chassis Price: With Battery | Chassis Price: Without Battery | Wh'l-base | Battery Location | Motor Location and Number | Final Drive |
|---|---|---|---|---|---|---|---|
| Baker CC | 7,000 | 3,500 | | 137 | amid-u. | rear-1. | dbl chn |
| Couple-Gear H | 7,000 | 4,200 | 3,600 | 96 | amid-u. | in wheel 4. | bevel 4 |
| C.T | 7,000 | | 3,530 | 115* | amid-u. | unit-x-4. | spur gear 4 |
| G.M.C 7 | 7,000 | 2,600 | 2,000 | 150* | amid-o. | rear-1. | dbl chn |
| G.V | 7,000 | | | 184 | amid-u. | rear-1. | dbl chn |
| Lansden M | 7,000 | 4,455 | 2,475 | 130 | amid-u. | unit-j-1. | dbl chn |
| Ward EC | 7,000 | | | 132 | amid u. | amid-1. | dbl chn |
| Waverley | 7,000 | 3,400 | | 127 | amid-u. | rear-1. | dbl chn |

### TRUCKS OF 4-TON CAPACITY

| Name and Model | Capacity in Lbs. | Chassis Price: With Battery | Chassis Price: Without Battery | Wh'l-base | Battery Location | Motor Location and Number | Final Drive |
|---|---|---|---|---|---|---|---|
| Walker E | 8,000 | | | 130* | amid-u. | unit-x-1. | spur gear |

### TRUCKS OF 5-TON CAPACITY

| Name and Model | Capacity in Lbs. | Chassis Price: With Battery | Chassis Price: Without Battery | Wh'l-base | Battery Location | Motor Location and Number | Final Drive |
|---|---|---|---|---|---|---|---|
| Baker EA | 10,000 | 3,850 | | 137 | amid-u. | rear-1. | dbl chn |
| Couple-Gear A | 10,000 | 4,800 | 4,100 | 98 | amid-u. | in wheel-4. | bevel-4 |
| C.T | 10,000 | | 3,935 | 132* | amid-u. | unit-x-4. | spur-gear-4 |
| G.M.C 10 | 10,000 | 3,060 | 2,350 | 166* | amid-o. | rear-1. | dbl chn |
| G.V | 10,000 | | | 139 | amid-u. | rear-1. | dbl chn |
| Lansden M | 10,000 | 5,190 | 2,850 | 142 | | unit-j-1. | dbl chn |
| Walker N | 10,000 | | | 130* | amid-u. | unit-x-1. | spur gear |
| Ward ED | 10,000 | | | 159 | amid-u. | amid-1. | dbl chn |
| Waverley | 10,000 | 3,950 | | 136 | amid-u. | rear-1. | dbl chn |

### TRUCKS OF 6-TON CAPACITY

| Name and Model | Capacity in Lbs. | Chassis Price: With Battery | Chassis Price: Without Battery | Wh'l-base | Battery Location | Motor Location and Number | Final Drive |
|---|---|---|---|---|---|---|---|
| Couple-Gear AF | 12,000 | 3,800 | 3,200 | 110* | amid-u. | in wheel-2. | bevel f |
| G.M.C 12 | 12,000 | 3,720 | 2,500 | 174* | amid-o. | rear-1. | dbl chn |

### TRACTORS

| Name and Model | Capacity in Lbs. | Chassis Price: With Battery | Chassis Price: Without Battery | Wh'l-base | Battery Location | Motor Location and Number | Final Drive |
|---|---|---|---|---|---|---|---|
| Couple-Gear HF1 | 4,000 | 2,250 | 1,850 | 80 | amid-u. | in wheel-1. | bevel-f |
| Lansden | 20,000 | 3,660 | 2,100 | 58 | amid-o. | rear-1. | dbl chn |
| Walker DK | 20,000 | | | 74* | rear-o. | unit-x-1. | spur gear |

**ABBREVIATIONS: General** *, *with other options;* **Battery Location,** amid-u, *amidships, underslung below frame;* amid-o, *amidships over frame;* rear-o, *at rear, over frame;* rear-u&h, *at rear under frame and also under a hood forward;* u-hood, *under hood;* front-u, *in front, under frame;* u-seat, *under seat;* ends-o, *at both ends, over frame.* **Motor, Location and Number,** amid, *amidships;* unit-j, *unit with jackshaft;* unit-x, *unit with axle.* Numbers following *refer to number of motors in chassis.* **Final Drive,** dbl chn, *double chain;* sp-bev, *spiral bevel gears;* herring, *herringbone gears;* -f, *to front wheels;* -4, *to all four wheels.*

# Ohio Plans to Tag 250,000 Cars During Present Year

## Motor Registrations for 1915 Show 47 Per Cent Increase Over 1914—New Sells $1,905,153 Worth of Licenses

COLUMBUS, O., Jan. 10—The report of W. H. Walker, Ohio registrar of motor car for 1915, shows an increase of approximately 47 per cent in the number of motor cars registered as compared with 1914. In other words 181,310 cars were registered by the department in 1915 as compared with 122,504 cars in 1914. This shows an increase in number of 58,806.

The records of the department show that 32,941 cars were registered in 1910; 45,788 cars in 1911; 63,118 in 1912; 86,156 in 1913; 122,504 in 1914 and 181,310 in 1915. This shows an increase of approximately 37 per cent in 1911; 36 per cent in 1912; 41 per cent in 1913; 61 per cent in 1914 and 47 per cent in 1915. The general average of percentage of increase in the department since 1910 is 45.

Arrangements have been made by the department to register 250,000 cars in 1916 and it is believed the number will reach that figure. Based on the rate of increase which has maintained for 5 years, the number registered in 1916 should be about 263,000. If these figures are correct there is a market in Ohio during 1916 for approximately 100,000 cars. The normal increase would be something over 80,000 and counting the cars worn out and discarded for good, the number will easily reach 100,000.

**Agents Figure 1916 Business**

Agencies are now figuring on that amount of business to be done in Ohio. A large percentage of this business will be done in the rural districts of the state for it is a known fact that the market for cars in the agricultural sections is not as much worked as in the cities. But there will be a heavy demand for cars from the centers of population such as Cleveland, Columbus, Cincinnati, Akron, Toledo, Dayton, Springfield, Canton, Youngstown and Hamilton.

There has not been any material change in the kind of cars sold in the Buckeye state as far as price is concerned. In the rural sections there is still a marked demand for the medium and lower-priced cars. While the general level of prices has been reduced during the last year, there is no change in the relative price of cars wanted in the cities. There are quite a few of the higher-priced cars in demand in the larger centers of population and a fair percentage of medium-priced vehicles. The lower priced cars also are the most popular in the cities.

The past season has been a fairly good one from the agricultural standpoint. Crops have been fairly good and prices have been extra high. Of course, considerable loss was occasioned during the year 1915 because of the exceedingly wet weather and some of the crops could not be saved. But on the whole, the farmers of the state are prosperous and a part of this prosperity will be shown in the demand for motor cars.

The manufacture of war munitions in many of the cities of the state has added materially to the prosperity of every locality. Payrolls are now bigger and the business depression of a year ago has given way to prosperity which is believed to be on a substantial basis. Outside of war munitions, manufacturing has been constantly expanding and prosperity is not restricted to war supplies. The ability of the people of the state to buy 100,000 or even more motor cars in 1916 is not questioned by those who are in a position to know.

**Cuyahoga County Leads**

The records of the Ohio department show that Cuyahoga county, which contains the city of Cleveland, is the largest user of motor vehicles, being credited with 26,719. Hamilton county, which includes the city of Cincinnati, registered 11,995; Franklin county, containing the city of Columbus, used 9,287 cars; Lucas county, containing the city of Toledo, registered 8,022 cars, and Summit county, with Akron, registered 6,252 cars.

In the registration in 1915 electrics have been separated from gasoline cars for the first time in making up the report. The number of electrics registered during the year was 4,476. Of that number, Cuyahoga county had the most with 2,045 and Franklin county was second with 644. Lucas county had 436 while Hamilton county was fourth with 356.

In manufacturers and dealers there is an interesting showing in the report. The total registered for the state was 1,449. Franklin county, containing the city of Columbus, had the most with sixty-seven, while Cuyahoga county was second with sixty-one and Hamilton county third with fifty-one. Lucas county had thirty-one, while Stark county had forty-two and Mahoning county thirty-eight. Meigs and Gallia counties were at the bottom with but two dealers each.

### TAGS BRING IN $1,905,153

Albany, N. Y., Jan. 4—Eleven months of motor car registration in this state, ending December 31, have brought receipts amounting to $1,905,153 to the office of Secretary of State Hugo, as compared with $1,618,060.36 for 12 months of 1914. With 1 month's receipts still to come in the year, the total will amount to several thousand dollars more, but will be under the two million mark, which at one time during the summer's rush seemed possible.

Up to January 1 of this year, 233,325 cars were registered in this state by owners and dealers; 231,126 by the former and 2,199 by the latter. During the same months in 1914, a total of 169,966 cars were registered, or 61,160 less than this year; dealers numbered 1,743 and owners 168,223.

Few persons realize the number of license plates lost from cars during the year. From the New York City district, 1,576 plates have been reported as lost or stolen during the 11 months of 1915; 605 from Buffalo, and 404 from Albany; a total of 2,585.

The following shows the registration of cars in this state up to January 1, 1916, with the number of owners, dealers, chauffeurs and total receipts from all sources for each of the three districts:

| Receipts | Chauffeurs | Dealers | Owners | |
|---|---|---|---|---|
| New York.. | 101,074 | 724 | 55,222 | $ 921,817.00 |
| Buffalo .... | 72,815 | 750 | 13,086 | 548,565.50 |
| Albany .... | 57,237 | 725 | 12,958 | 434,770.50 |
| Total ... | 231,126 | 2,199 | 81,266 | $1,905,153.00 |

Towards the total amount, owners, chauffeurs and dealers have paid in registration fees the following:

| | Owners | Chauffeurs | Dealers |
|---|---|---|---|
| New York.. | $738,112.50 | $149,084.00 | $15,448.00 |
| Buffalo .... | 484,267.50 | 41,433.00 | 16,371.00 |
| Albany .... | 374,332.50 | 40,235.00 | 14,792.00 |

### ARREST MORE THAN 3,000 MOTORISTS

St. Louis, Mo., Jan. 10—Three thousand and eight motorists were arrested for speeding and violation of other traffic laws during 1915, according to statistics made public by the police department here today. This figure represents a fifth of the total number of car owners in the city. In the 2 months that a Ford runabout has replaced two motorcycles, the patrolmen operating it have made 336 arrests. Of the total number of arrests, about 150 were for speeding and several hundred for violation of the recently created anti-glare headlight law.

### INVENTS RUBBERLESS TIRE

Vienna, via London, Jan. 10—An Austrian engineer named Von Dunikowski has applied for a patent on a tire consisting of wood fibre and certain binders. The specifications show that the tire follows the old pneumatic principle in every detail, there being an inner tube and an outer tire. The main material used is willow and birch fibre. What the binder consists of has not been revealed, but it is known that no rubber whatever is used. It is stated that a motor car fitted with the new tires ran 437 miles and showed no signs of undue wear.

# The Readers' Clearing House

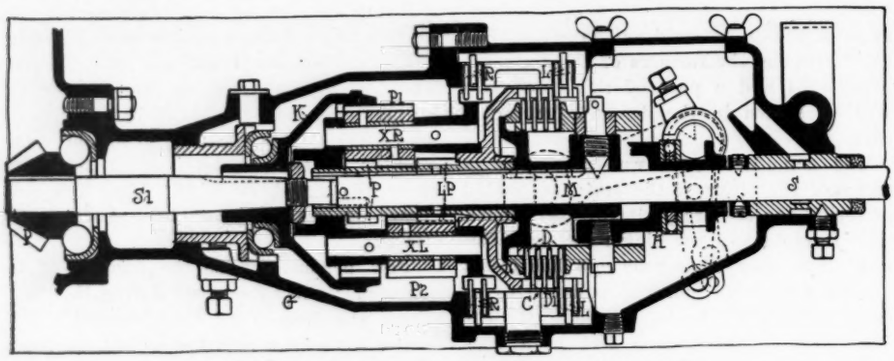



*Fig. 1—Plan view of Brush planetary gearset and clutch*

## THE BRUSH ONE-CYLINDER GEARSET

### Thinks Clutch Plates Stick Together—Differential Gear Oiling

NEW YORK—Editor Motor Age—Would you kindly publish a diagram of the transmission and clutch of a one-cylinder Brush When starting the motor, the foot brake being on, and the change-speed lever in neutral, the car jumps forward every time the cylinder explodes for about 2 inches or so and keeps doing this until the engine runs regular. I am of the opinion that the plates in the clutch, if there are any, are sticking together and do not allow the engine to run free of the transmission.

2—Does the heavy transmission oil which is being used in the transmission gears run back and lubricate the differential gears?—J. B. McG.

1—Fig. 1 shows a plan drawing the gearset and clutch of the Brush one-cylinder car. An explanation follows:

The transmission is of the planetary type, giving two forward speeds, and gives direct drive on high speed by locking the gears with a clutch, a type of multiple-disk clutch shown at C being used. In this plan section of the gearset the shaft S connects with the motor and the pinion P transmits to the differential on the jackshaft, from which final transmission is by short side chains. This planetary set differs from the conventional planetary set in that friction bands are not used to hold drums from revolving to secure low speed and reverse, but rather multiple-disk clutches are utilized for obtaining these speeds. The high-speed multiple-disk clutch C consists of alternate sets of disks D and D1, which rest between vise-like jaws, one of which is formed out of the spider, and the other is in concentric relation, sufficiently spaced in the axle plane to afford room for the disks plus clearance when the clutch is not engaged.

For direct drive power must be transmitted from the shaft S to shaft S1, carrying the pinion P so that both will rotate at the same speed. On the end of the shaft S is keyed the spur-gear P, constantly in mesh with a set of three planetary pinions P1, and these planetary spur gears P1 are, in turn, constantly in mesh with an internal gear on the spider K, which spider is keyed to the shaft S1. To obtain direct drive the carrier H engaging the alternate sets of disks D and D1 in the clutch, locks the disk carrier M with the spider N, which carries the other set of disks D1. In this way both shafts XR and XL are locked to rotate in unison with the shaft S, and they carry the spider K around with them. To get reverse and low speed ahead two other three-disk clutches, R and L, are required, the operation of which is simple.

For reverse, the clutches B lock the three shafts XR, only one of which appears, as these shafts are spaced at 120 degrees from one another around the mainshaft S. The three pinions P1 then rotate on their shafts XR, transmitting to the spider K, which is thus driven in an opposite direction to the shaft S. For low-speed ahead the clutch L is used, which locks the spider N so that it is stationary in the case G. This spider carries a low gear pinion LP in mesh with the three pinions P2, which set up a planetary movement around it.

When the driver desires to engage the high-speed clutch, movement of the lever results in the closing of the vise on the disks as follows: Through the compound

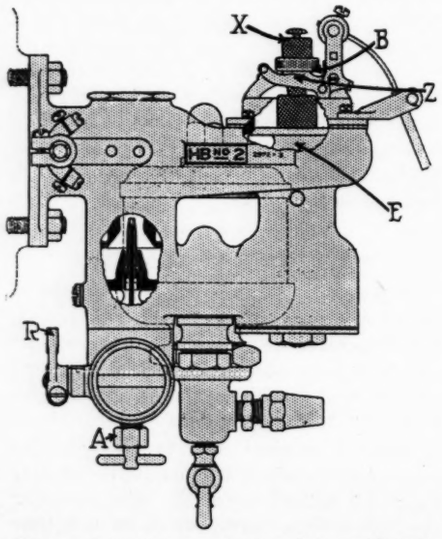



*Fig. 2—Adjustments of Stromberg carbureter*

action of a screw, which is thrown into engagement by the lever system, the original effort of the operator is added to by the torque of the screw, transposing the torque of the motor. All the operator has to do is to make the initial effort, and the pressure resulting is enough to bring the screw into action, when the torque of the motor will serve to engage the clutch by a winding up process, all without the use of a heavy spring and at the expense of a minimum effort on the part of the operator, while, at the same time, the engagement is not only gradual but positive. It will be noted that there are five plates to the clutch.

2—No.

## SETTING STROMBERG CARBURETER

### Condensation of Gasoline in Manifold May Cause Spitting

Nashua, Ia.—Editor Motor Age—Please give diagram of Stromberg carbureter on the model 4-36 1915 Kisselkar and tell me how to adjust it.

2—Will the above mentioned car start and run without the storage battery?

3—Why does the carbureter spit back gasoline when stopping the engine?

4—What is its gear ratio?—Hugo Berschel.

1—Figure 2 shows a cutaway view of the Stromberg carbureter, type HB, No. 2, which was used on the model 4-36 1915 Kisselkar. There are only two adjustments on this carbureter. A, the low-speed, which is a needle valve seating in an open nozzle, the opening of which is usually two sizes larger than is ordinarily necessary, which permits an increase in the gasoline flow to that extent, and which also can be shut off entirely. The other is the high-speed adjustment B, which controls the flow of gasoline on high speed by regulating the time when the secondary needle valve begins to open. Before starting the motor, open all pet cocks on the carbureter, so that the inrush of gasoline will clean out any dirt which might have gotten into the carbureter. Next set the high speed nut B so there is at least $\frac{1}{32}$ inch clearance between it and the needle cap above it at X, when the air valve E is on its seat. The needle valve does not begin to open until B comes in contact with X. The rocker arm of the dash adjustment should not be in contact with the collar above it at Z when the steering post control is all the way down. To start the motor, raise the steering post control to its highest position, thus producing an extra rich mixture. In extremely cold weather it may be necessary to close the air supply in the hot air chamber by means of a rod connected to the control R. However, this should be opened as soon as the motor starts. Next gradually lower the steering post control as the motor warms up and see that it is in its lowest position

and that the motor is thoroughly warm before making any adjustments to the carbureter. The mixture at low speed is controlled by the needle valve A. If too rich turn valve A clockwise which decreases the supply of fuel and if the mixture is too lean turn A anti-clockwise, thus giving a richer mixture. For the high speed adjustment advance the spark and open the throttle and if mixture is too lean on high speed, turn B anti-clockwise until the desired results are obtained. If the mixture is too rich turn B in the opposite direction.

2—The Kissel will start and operate on magneto.

3—This is probably caused by the gasoline condensing in the manifold and running back into the carbureter.

4—3.91 to 1.

### PUZZLED REGARDING RING LAPPING
#### Unnecessary to Remove Metal From Piston Walls to Make Fit

West Somerville, Mass.—Editor Motor Age—Describe the process of lapping piston rings in cylinders.
2—Is it necessary to remove any metal from the piston walls in order to make a better fit?
3—Does any harm result from using circular movement instead of reciprocating in manipulating piston lapping tools?—E. T. F.

1—In the factories, the piston rings are lapped in on the pistons, and in most cases this simply means the running of the engine for several hours by external power. Usually a belt from an overhead drive shaft is placed over the flywheel, and the engine driven thus until all parts are run in. Lapping in the rings in a repair shop should be done in the same way. Assemble them on the pistons and while using a good supply of oil, drive the motor by external power for several hours, if possible.

2—No. You should not have to tamper with the pistons or rings at all. If they do not fit, then they are not of the correct size, and you will have to secure others that will slip into the ring grooves as they should. If they are not too much oversize the rings can be ground and filed to size.

3—The best motion is a combination of rotation and reciprocation, but the desired results would not be obtained by giving them only rotary motion.

### BREEZE CARBURETER ON HUPP 20
#### Reader Seeks Information About Adjustments to Be Made

Mishawaka, Ind.—Editor Motor Age—Please explain in Motor Age the following:
1—How are adjustments of the Breeze carbureter made as used on the Hupp 20?
2—Would graphite mixed with oil harm the clutch or cause it to slip on the Hupmobile 20?
3—Should grease or oil be used in the rear axle of this car?
4—How many drops of oil should be fed to the motor on this car when the throttle is wide open?
5—What is the speed of the Hupp 20?—Floyd H. Fulmer.

1—The Breeze carbureter is shown in Fig 3. In adjusting first get the motor warm by operating it for about 1 hour then slowly turn down the needle valve which locks every time the knurled nut strikes the small rod at the right. Do this slowly and if, while turning down the

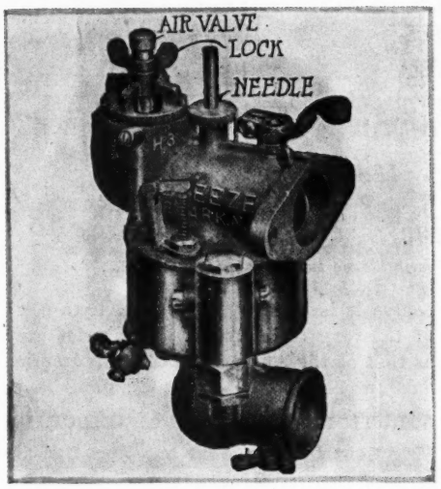



*Fig. 3—Adjustment of Breeze carbureter*

needle valve, there is a noticeable pick-up in the motor, stop turning. Do not move the throttle while moving the valve. Should the motor stop when the needle is turned down, then turn the needle back again, start the motor and begin turning the valve in the opposite direction. The object is to get the motor to operate as fast as possible with a given throttle setting. If you cannot get results by adjusting the needle valve, set the latter as well as possible and adjust the air valve by turning either to the right or left trying first one way and then the other. Stop all leaks about the inlet manifold and if the valve stem guides are worn very much, it indicates a leakage of air at those points.

2—If proper attention is given the spring in the clutch you should have no difficulty due to slipping through the use of graphite with the oil. The clutch in the Hupp 20 is a wet disk, steel-against-steel.

3—Heavy oil should be used in the rear axle in preference to grease, though not so heavy but what it will follow the gears and make for quiet running.

4—The oil control in this car is connected directly with the throttle and when the throttle is wide open, oil should be fed to the motor at about fifteen to twenty drops per minute. However, you probably will have better success by adjusting the oil feed at low speeds, or when the motor is idling, at which time five or six drops per minute should be fed. If this adjustment is made it seems likely that when the throttle is wide open the feed will be taken care of automatically. If you find the motor is smoking, which indicates the feeding of too much oil, a part of the supply should be drained through the pipe at the bottom of the crankcase and the oiler readjusted to feed less rapidly.

5—40 miles per hour.

### WANTS TO DISCARD STARTER UNIT
#### Possible to Disregard Starting System If One So Desires

Terrell, Tex.—Editor Motor Age—I have a model 37 Hudson, part of which went through a fire, burning the battery and starter switch. Can I use a 6-volt battery and charge it with the Delco generator and cut the starter out?
2—Can the generator be used so I can put a meter on the dash?
3—Please give wiring diagram with the lights in series.—C. E. White.

1—It will be all right to do this.

2 and 3—It is possible to make use of an ammeter in connection with the lighting system, and as it is most desirable to know the charging rate, the most accessible point in the charging circuit is the cut-out relay. This is situated on top of the controller switch in the battery box mounted on the running board. Referring to Fig. 4, the wire leading to terminal No. 2 should be disconnected and the ammeter inserted at this point. We are under the impression that the positive terminal of the ammeter should be connected to the terminal No. 2 on the relay, and the negative terminal of the ammeter to the wire which was disconnected from the relay. This, however, can readily be determined when making the installation. If the ammeter reads wrongly, reverse the connections. The ammeter in this position will not indicate the current consumed for the lamps or any other purpose. If, however, the armature of the cut-out relay be depressed by the finger when the engine is not running, this will cause the generator armature to turn slowly and the current used for this purpose will be indicated by the ammeter.

### Cannot Recharge Dry Batteries

Des Arc, Ark.—Editor Motor Age—Will you please give me a recipe for recharging dry cell batteries?—H. E. Meddick.

Dry cells can not be renewed in the sense that storage batteries can be recharged. When a dry cell becomes exhausted it is possible to recuperate it so as to get a few additional miles out of it. To accomplish this, punch a few holes in the zinc retainer and dip into water. Rejuvenating dry cells

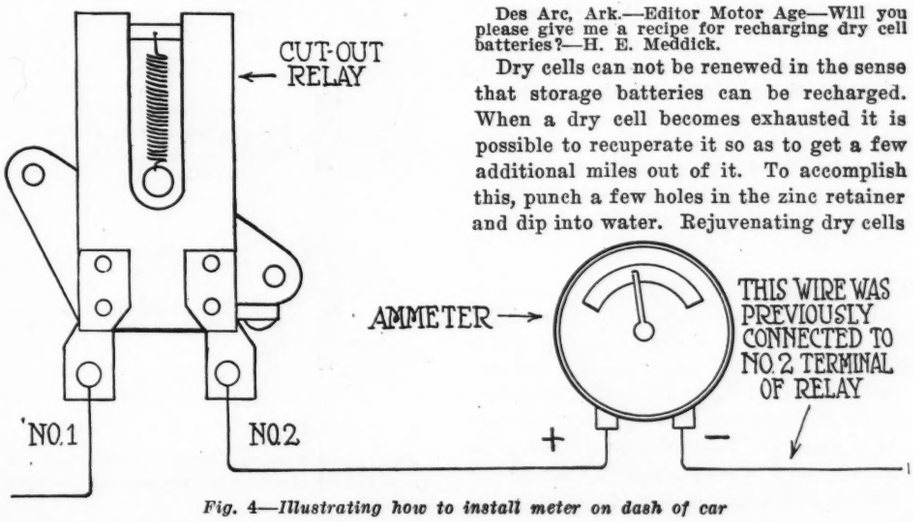



*Fig. 4—Illustrating how to install meter on dash of car*

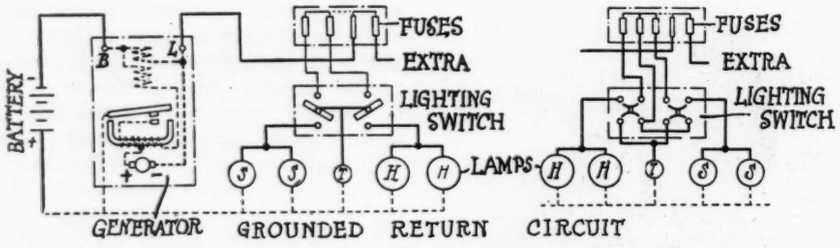



*Fig. 5—Schematic wiring of Westinghouse two-unit system*

invariably consists in increasing the moisture of the cell.

## USING ALL ALCOHOL IN RADIATOR

### Evaporation Would be Rapid and Ideal Cooling Facilities Lost

Salem, O.—Editor Motor Age—Would there be any objection to using denatured alcohol undiluted in the radiator. When alcohol and water are used combined, the mixture is a dead loss after the need is past. If all alcohol could be used, then after the danger of freezing was over, it could be drained off and used for other purposes or saved and used again. This being the case, would it not be more economical than using a solution of alcohol and water? Would the loss from evaporation be enough to offset the saving?—C. H. Martin.

It is evident that you have given too little thought to evaporation in this connection. In the first place, you would not get the desired cooling effect from the use of denatured alcohol alone. The boiling point of denatured alcohol is 173 degrees F., while that of water is 212 F., although either give off vapor considerably before these degrees of temperature are reached. Water begins to give off vapor at about 150 degrees F., while alcohol begins to vaporize shortly after the 100 degree mark is passed. To give you some idea to how much greater extent alcohol evaporates under the ordinary heat generated by the motor than does water, it may be said that the ratio as between alcohol and water is approximately 10 to 1. From this it will be seen that the loss through evaporation would be very great if undiluted denatured alcohol were used, and if the car were used to any extent refilling often would become necessary, to say nothing of the evaporation when the car was idle.

### Racing the Severest Test

Franklin, Ind.—Editor Motor Age—Does Motor Age recommend raising the cylinders on a car to stop excessive spark knocking?

2—Has there ever been any test made to determine whether or not this cuts down the actual horsepower of a motor or not?

3—What was the most severe official test which any gasoline motor of any type was ever put to, either in America or abroad? Kindly describe test in full.—Subscriber.

1—No.

2—Raising the cylinders, if we understand what you mean, would decrease the compression pressure, as you would increase the combustion space. This would, of course, cut down the power of the engine.

3—Probably the most severe tests to which motor car engines are subjected is in racing work. It would be difficult to say which of the great races would put the motor to the greatest test. The terrific strain and continuous running at extremely high speed which a motor must undergo in a long race is undoubtedly more severe than any test in a laboratory, although of course it is of shorter duration than some of the long tests run in laboratories such as that of the Automobile Club of America at New York.

## SOLUTIONS OF CALCIUM CHLORIDE

### May Contain Free Acid but This Can Be Overcome

Sharon, Pa.—Editor Motor Age—As a freezing preventive for the water in the radiator, it has been suggested to me that I use calcium chloride, 5 pounds to a gallon of water. Before using this would like to know if, in your opinion, this is a safe mixture to use. What effect, if any, would it have on the steel, rubber and brass through which the fluid would pass while circulating?—A. A. Keally.

Calcium chloride is a by-product of manganese ore and hydrochloric acid. Being a salt solution it has a tendency to produce a distinct electrical action wherever two dissimilar metals are used together in the cooling system such as the brass tubing of a radiator and the solder used at the joints, the cast-iron water jackets and other parts made of aluminum, brass, steel or bronze. It is very soluble in water and while in solution will lower the freezing point. It may contain free acid in the crude form though this may be neutralized by the addition of a little slaked lime.

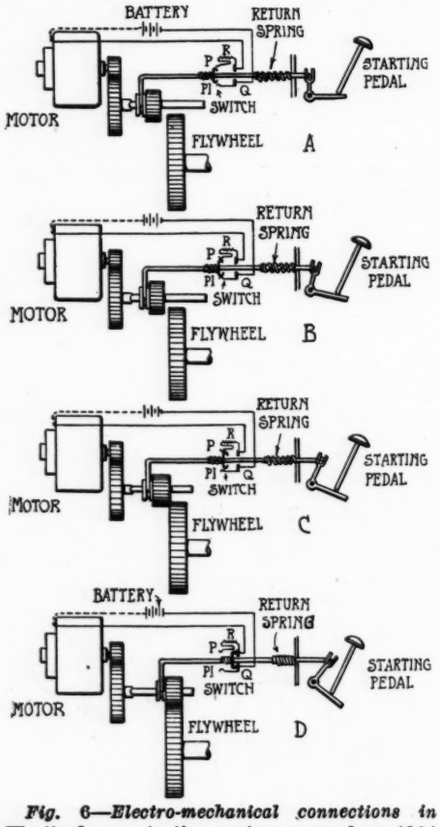



*Fig. 6—Electro-mechanical connections in Westinghouse starting system as used on 1914 Marion*

While calcium chloride solutions have been very popular they are not as well thought of at the present time because of a certain electrical action which is set up when the water circulation system is composed of dissimilar metals. Since hydrochloric acid is used when this salt is obtained there may be some free acid in combination with the cruder grades. The chemically pure calcium chloride offers a less amount of acid than the refined product. The corrosive action of the chemically pure salt is very slight although electrical action will be noted if dissimilar metals are employed regardless of the purity of the salt in the solution.

It is unlikely that a solution of 5 pounds of calcium chloride to 1 gallon of water would be necessary in your vicinity since that combination does not freeze until the temperature reaches minus 39. A solution of 4 pounds of calcium chloride to 1 gallon of water withstands temperatures down to minus 17, while a solution of 3 to 1 freezes at about 2 below zero.

## SEES NEED OF NEW FORMULA

### Reader Voices Opinions Regarding Improper Use of N. A. C. C. Rating

Franklin, Ind.—Editor Motor Age—I have often noticed, in the department, questions concerning the A. L. A. M. or N. A. C. C. horsepower rating. There seems to be quite a little confusion concerning the proper application of this formula, as it is applied to the two so-called types of motors—that is, the big-bore and long-stroke types.

Would it not be fairer to the motor under discussion if it were stated that the motor developed so many horsepower A. L. A. M. rating at a certain number of r. p. m., for, if I understand this formula right, it is based on each 1,000 feet of piston travel, and this latter can very readily be changed into revolutions per minute.

For instance: In a motor whose stroke is 5 inches the piston moves 10 inches in every revolution. Then, as there are 12,000 inches in 1,000 feet, in 1,000 feet the motor makes 1/10 of 12,000, or 1,200 revolutions.

Comparing two motors, we have one of 3¾ by 5 and another of 3¾ by 3¾, each four-cylinder. The A. L. A. M. rating of each of these is 22.5 horsepower, yet it is obvious to anyone that the 3¾ by 5-inch motor is far more powerful than the 3¾ by 3¾. Would it not be better to say that the 3¾ by 5 motor develops 22.5 horsepower at 1,200 revolutions per minute, and that the 3¾ by 3¾ develops 22.5 horsepower at 1,600 revolutions per minute?

It seems to me that some kind of a formula could be worked out from this which would compare both the motors at a certain number of revolutions per minute.—Samuel Dolan.

This is, of course, the better way of comparing engines. But it is always understood that when the N. A. C. C. rating, formerly the A. L. A. M., is applied, it means at 1,000 feet per minute piston speed. Your ideas on the matter of equable basis of comparison of motor power are held by most engineers, but as yet no formula has been devised that is sufficiently simple to apply correctly to all bores and strokes of engines. If you will go back over former issues of Motor Age, you will notice that much attention has been given this very matter.

### Wants Westinghouse Wiring Plan

St. Louis, Mo.—Editor Motor Age—I would like Motor Age to mail or publish diagram of the Westinghouse starting and lighting system used on the 1914 Marion. I have a 1914 Marion roadster made into a speedster with Westinghouse starter and generator, but same is not connected and car is not wired.—C. E. Shampaign.

1—Fig. 6 gives a diagram of the elec-

tric and mechanical connections of the motor and switch for non-automatic pinion shift, flywheel drive, which was the type of apparatus used on the 1914 Marion. Fig. 5 shows the wiring diagram of the generating unit used on the Marion.

### CHANGING MAGNETO ON OVERLAND

#### Wants to Use High-Tension Instead of Low—Timing Explained

Frankfort, Me.—Editor Motor Age—Could a model 69 Overland be changed from low tension to high tension by changing magnetos and eliminating the coil?
2—If so, what would be the cost of such a change?
3—What would the timing be?—Subscriber.

1—Present Overland cars employ a magneto of Splitdorf manufacture, although the model 69 did not use this make. The change is possible, however, and if a Dixie 40 high-tension magneto were used, the magneto coupling should be bored to fit the new unit and a shim placed under the base to raise the magneto to the proper height in relation to the magneto drive shaft on the engine.

2—Were you to employ the Dixie 40 such as is used on the present Overlands, we understand an exchange is possible through any Splitdorf service station plus $30, or at the head office which is located in your city.

3—To time this magneto the piston should be on top center of compression stroke with the breaker in retarded position and the points just starting to break.

### ADJUSTING CARBURETER ON DODGE

#### Reader Had Difficulty Through Play in Steering Gear

South Hampton, L. I.—Editor Motor Age—What names distinguish the two types of cantilever springs as used on the Saxon and King cars?
2—Is the Stewart carbureter on the Dodge adjusted?
3—How is the lost motion taken up in a Dodge steering gear? It is a screw and nut combined with a rack and sector gear. There seems to be too much play between the sector and the rack and when the steering wheel is turned the nut turns around slightly before it turns the sector. There is about 5 inches of play in the steering wheel.—A Reader.

1—There are no trade names distinguishing the two types of cantilever springs you mention. Of course there is a difference in the mounting, those on the King carrying the weight of the car in the center of the spring while those on the Saxon carry it on the end. The Saxon spring might be termed a "quarter-elliptic" in that it has almost the appearance of a half of a semi-elliptic spring.

2—Fig. 7 shows the Stewart carbueter model 25, such as is used on the Dodge car. There is but one simple adjustment which consists of raising or lowering the tapering metering pin thereby increasing or decreasing the amount of gasoline admitted to the mixing chamber. It is an adjustment easily made and when correctly set should be permanent, the amount of air and gasoline being determined by the engine speed. This adjustment is made while the motor is running at slow speed and the clutch disengaged, the adjusting screw which will be noted in Fig. 7 being

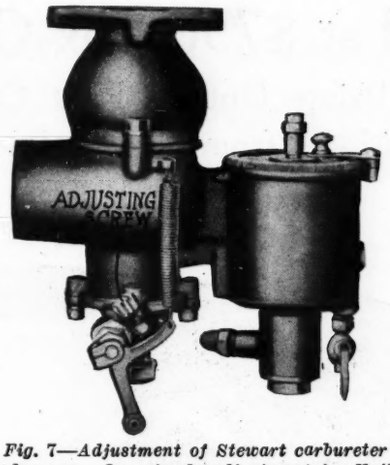



*Fig. 7—Adjustment of Stewart carbureter on Dodge car. One simple adjustment is all that is necessary*

moved up or down until the motor runs smoothly. Moving the adjusting screw up raises the tapering metering pin and decreases the supply of gasoline while lowering it reverses the operation.

3—It is assumed from your question that you have one of the later Dodge models in which the steering gear differs somewhat from the first cars put out. It would seem that your difficulty is that the screw nut is worn and if such is the case there is nothing to do but replace it. Inquiry at a Dodge station, either in New York or Brooklyn, probably will set the matter straight for you. If there is any end play, the steering gear shaft connection locking screw and the lock cap screw on the adjusting nut should be loosened. Then the large adjusting nut at the top of the steering gear case screwed down after which again tighten the locking screws on the adjusting nut and shaft connection.

**Communications Received and Inquiries Answered**

J. B. McG.....New York
Hugo Berschel.....Nashua, Ia.
E. T. F.....West Somerville, Mass.
Floyd H. Fulmer.....Mishawaka, Ind.
C. E. White.....Terrell, Tex.
C. H. Martin.....Salem, O.
H. E. Meddick.....Des Arc, Ark.
A. A. Keally.....Sharon, Pa.
Subscriber.....Frankfort, Me.
Samuel Dolan.....Franklin, Ind.
Subscriber.....Franklin, Ind.
C. E. Champaign.....St. Louis, Mo.
A Reader.....South Hampton, L. I.
A. Maehler.....Chicago
Adam Egle.....Geneva, Ind.

No communication not signed with the inquirer's full name and address will be answered in this department.

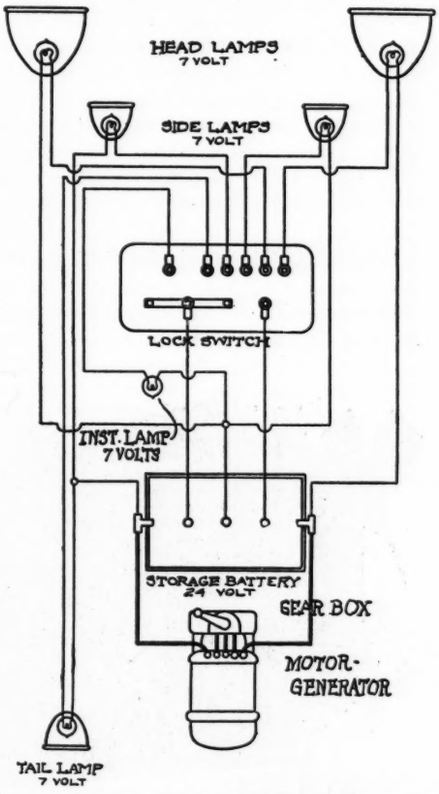



*Fig. 8—Wiring of 16-volt North East one-unit system*

### INSTALLING A NORTH EAST UNIT

#### Is Puzzled Over the Fifth Terminal Connection—Automatic Regulation

Chicago—Editor Motor Age—I have a North East motor generator of the 16-volt type and am in doubt as to the proper method of installation. In looking it over, I fail to find any of the usual heavy cable to carry the load it seems necessary to do its work. It is said that this instrument is internally regulated without relays or cutouts. This I also do not understand. At the wiring end there are parts for five connections and I cannot figure out the fifth unless it is a ground.
2—Could I couple two six-volt batteries and use a 12-volt for this?
3—Kindly give me an illustrated diagram of the wiring for this system and its correct speed in relation to engine speed.
4—Do you believe this instrument to have sufficient torque to turn over a 35-horsepower Wisconsin motor at 50 to 75 r. p. m.
5—When does the unit start generating?—A. Maehler.

1—Fig. 8 shows a wiring diagram of the 16-volt North East motor generator system. Three of the wires you will notice run from the generator terminals to the switch on top of the gearbox and the other two wires run to the battery. You are not quite correct in your construction of the current regulation since there is a relay in the lower part of the commutator end of the unit, which automatically controls the current output. This you may have overlooked in taking your instrument apart. The North East system of speed regulation is incorporated within the gearbox.

2—You can use two 6-volt batteries with this 16-volt generator, but it is not advisable. Better use a 16-volt battery or two 8-volt.

3—The wiring diagram is given in Fig. 8 and the correct speed ratio between the generator and the engine is automatically cared for by the gear construction within the box mentioned above.

4—Yes.

5—At about 10 miles per hour.

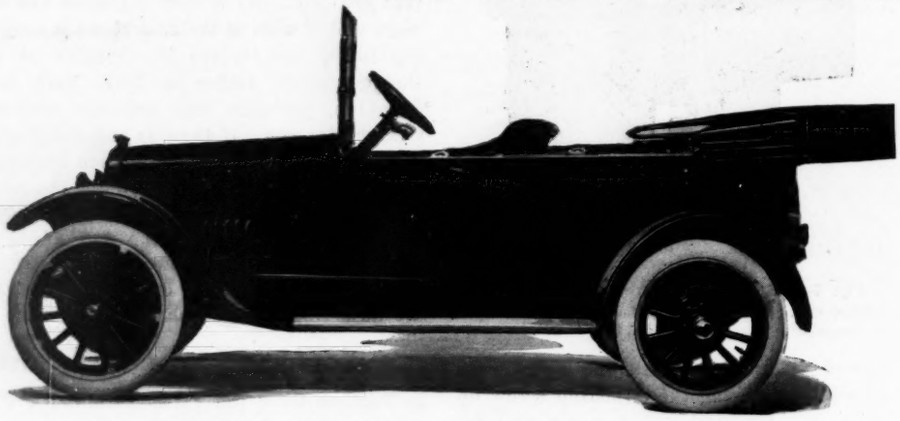
#### Ether Used in Gasoline

Geneva, Ind.—Editor Motor Age—Please advise what chemical I can mix with gasoline so that the motor will start easy and run better in cold weather than it does in using low-test gasoline. I do not want to use anything that would be harmful to the motor.—Adam Egle.

Three ounces of ether to 5 gallons of gasoline is the proportion usually used to give easier starting and better running with low-test gasoline.

# Laurel Four Will Sell at $750—Six-Cylinder in the Making

## New Indiana Concern Brings Out Its First Car and Will Announce Another Model from Hoosier Factory Soon



*The Laurel 35 five-passenger touring car that sells at $750*

THE Laurel Motor Car Co., Richmond, Ind., announces a new four-cylinder car to sell at $750, and soon will have ready a six that will sell somewhat under the $1,000 mark. Details of the six are not forthcoming at the present time, but specifications of the four include a block-cast motor with cylinders measuring 3¾ by 4¼ inches, rated at 22.5 horsepower at 935 feet piston speed per minute, instead of at 1,000 feet of piston speed per minute, as given in the usual practices, according to the N. A. C. C. formula.

Valves are extra large and much care has been taken in the timing arrangement so that a large amount of power is available. Under actual brake test the motor is said to give 31.9 horsepower at 2,000 r.p.m., and 36.9 horsepower at 2,800 r.p.m. The bearings are unusually large, the crankshaft front bearing being 1½ by 3⅞ inches, center, 1⅝ by 2¼, and rear, 1⅝ by 4 inches.

**Sleeves for Valve Stems**

Valves have cast iron heads and carbon steel stems and the guides for the stems are bushed with cast-iron sleeves 3 3/16 inches long. The valve rest is 7/32-inch and the opening clearance 1⅝-inch. The valves are adjustable and inclosed with breather opening, which allows the crank-case compression to pass out of the crank-case into the valve chamber and through these breathers into the cover. The breathers are so arranged that no oil can pass, but gives free air circulation.

The oiling system is a combination force-feed and splash, with revolving sight feed on dash, to which the oil is forced by a plunger pump. This sight feed is provided with an oil line leading the oil back to the three main bearings of the motor and then runs into the stamped steel oil tray, where the scoops on the lower ends of the connecting rods assure a splash of generous supply at all times. Cooling is by thermo-syphon.

The motor has a detachable cylinder head, making for good valve accessibility. The clutch is a single steel drive plate, having two asbestos-woven wire friction disks, running in oil. Three speeds forward are offered, drive is left and control levers in the center.

The motor, clutch and gearset form a unit, although the gearset may be removed without disturbing the other parts. Drive to the rear axle is by the full Hotchkiss system with double universal and spring suspended torque truss. The rear axle is of the floating type. The rear springs are cantilevers.

Body design conforms to the conventional streamline and ample leg room is provided for the driver and other occupants of the car. The rear seat is 48 inches wide and the upholstering is heavy and of good material. Among the equipment is found one-man top, demountable rims, speedometer, electric starting and lighting, electric horn, etc. Lightness has been given much thought by the engineers.

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**INAUGURATES NEW SERVICE PLAN**

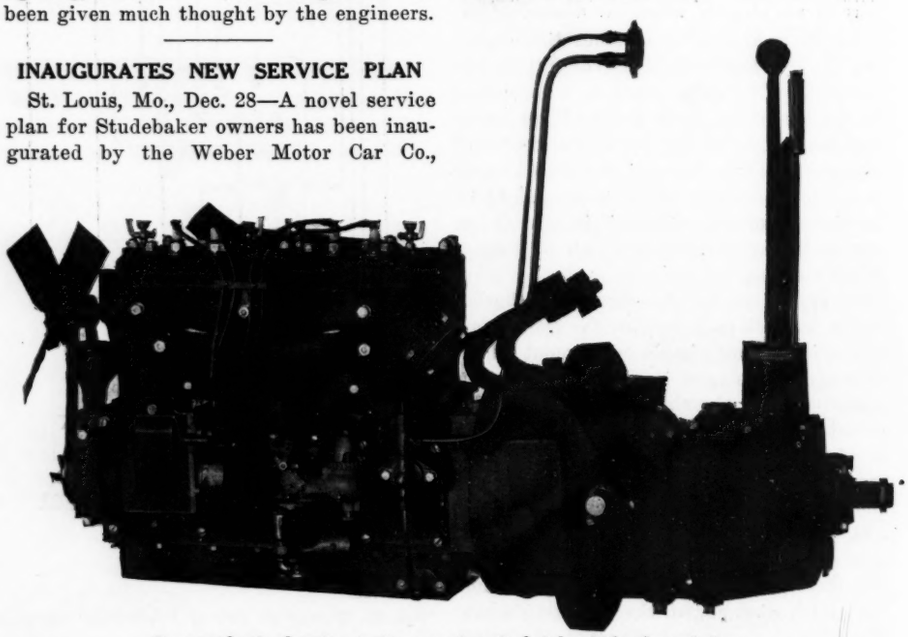
St. Louis, Mo., Dec. 28—A novel service plan for Studebaker owners has been inaugurated by the Weber Motor Car Co., Studebaker distributer in the St. Louis district. "The Definite Service Plan," as it is termed, aims to acquaint the owner gradually with the details of the construction of the Studebaker and with the measures of maintenance which will enable him to get the highest degree of efficiency out of the car.

**Expert Makes Inspection**

Five days after receiving the car the new owner brings it to the Weber company's service department and watches the company's expert make a thorough inspection of the machine. The service men at this inspection point out to the owner any errors he may have made in operation, oiling, greasing, etc., which if continued might prove costly. Twenty days later, a similar inspection is made, and after that five more at monthly intervals.

When a car is sold the purchaser is given a card specifying the dates of inspection and a duplicate card is kept at the office. By notifying the company a few days in advance the purchaser can change any inspection date to suit his convenience.

Edward Weber, president of the company, in describing the plan, says: "During these examinations we go over thirty-five parts of the machine, five at the front end, twenty-one in the motor and nine at the rear end. After the seven inspections to which each car is subjected the owner cannot help but acquire two valuable assets, one a detailed knowledge of how to take care of his car scientifically and the other, the habit of making regular and careful inspection."



*Power plant, showing unit gearset and clutch of the Laurel four*

# Republic Truck Adds a 3-Ton Internal Drive Model to Line

## Uses a Long-Stroke 4¼ by 5½-Inch Buda Motor of The L-Head Type—Cylinders Block-Cast

TO meet the requirements of varied lines of heavy hauling the Republic Motor Truck Co., Alma, Mich., has added a 3-ton model to its internal-drive truck line to sell at $2,350. The motor is a Buda, model TU, long stroke, with a bore of 4¼ inches and a stroke of 5½ inches. The powerplant is of the L-head type, block-cast. Interchangeable poppet valves are employed and the crankshaft is carried on three bearings attached to the upper half of the crankcase. Lubrication is by the constant-level splash system together with a force feed. Centrifugal pump and fan, together with a vertical round tube radiator furnish the cooling.

Ignition is by high-tension magneto with adjustable spark. The carbureter is a Stromberg and the fuel feed, gravity. An automatic governor is controlled by the velocity of the gas.

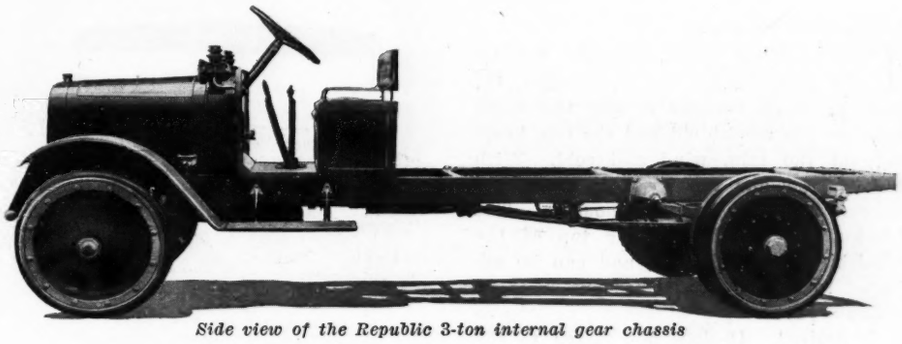
**Clutch Multiple Dry-Disk**

The gearset is selective with four forward speeds and one reverse. The gears have a ⅞-inch face and operate on annular ball-bearings throughout. The clutch is a multiple dry-disk, the friction surfaces being of saw steel, raybestos faced.

The rear axle incorporates the internal gear, the load being carried on a dead axle. Power is delivered through live shafts and pinions connected with the internal gears, which are bolted to the rear wheels. The internal gears are four pitch and 1½-inch wide and have 4 to 1 reduction. The differential reduction is 2¾ to 1.

The gear ratios are: Reverse, 42.9 to 1; first, 39.6 to 1; second, 22.7 to 1; third, 14.5 to 1 and fourth, 11 to 1. Brakes are compound, the emergency being double acting, internal expanding and the service external contracting.

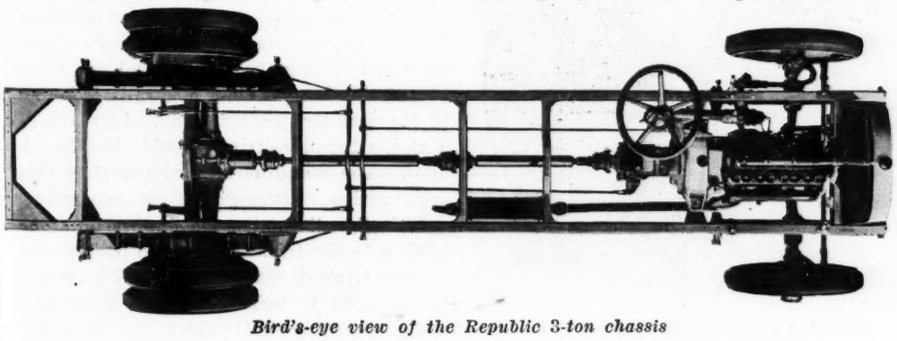
The wheelbase is 165 inches and tread 62 inches. The 185-inch chassis is $50 extra, or $2,400. The weight of the truck is 6,350 pounds.



*Side view of the Republic 3-ton internal gear chassis*

### STEPHENS NEW FREEPORT CAR

Freeport, Ill., Jan. 10—The Stephens is the name chosen for the new car shortly to be constructed by the Freeport branch of the Moline Plow Co., the falling off in the demand for buggies and farm wagons forcing the company to engage in the construction of motor cars in order to keep the plant working on full time and with a full force. M. A. Steele, manager of the Freeport plant, is in Detroit supervising the construction of the models. Two cars are being made and are due to reach Freeport January 1. They will then be given a 5,000-mile test run. The output for the first year will be approximately 600.



*Bird's-eye view of the Republic 3-ton chassis*

### TAG PROBLEM IN DELAWARE

Wilmington, Del., Jan. 11—A peculiar situation has developed in Delaware in regard to the operation of the state motor vehicle law. As one of the requirements is that no car can be operated in the state without a license tag of the current year, some owners were embarrassed last year, in view of the fact that the tags could not be issued in sufficient numbers about the first of the year so that every driver would have one. As the law allows no grace, many were arrested on the first day, though in a number of cases they had applied for license tags some days before.

This year, as an inducement to owners to pay their licenses early, and also to encourage contemplated owners to buy before the end of the current year, Secretary of State Hall announced that the 1916 tag would be recognized any time after December 15, when they were put on sale.

At about the same time the matter was put up to Judge Philip Q. Churchman, of Wilmington, and he interpreted the law to prohibit the use of a tag except for the current year, and as the law also prohibited the use of two sets of tags on one car, there was nothing for the police to do but enforce the court's order.

**Extend Time Limit**

As this situation not only operated against purchase of cars this month, and as some states permit the use of tags for an incoming year, in order not to hamper the trade or embarrass visitors who might not know the law here, the city council took the matter up, with the result that there have been several official conferences, and on Saturday the police commission issued an order permitting the use of 1916 tags on the last day of 1915.

As a result of the controversy, it is likely that at the next session of the legislature an effort will be made to have the motor law amended so as to overcome the difficulty.

### TALK STEVENS-DURYEA REVIVAL

Springfield, Mass., Jan. 12—Rumors that the Stevens-Duryea company will be resurrected continue to find their way to the surface with much persistency here of late. One handicap, it is believed, is the lack of skilled workers, the establishing of the munitions plants here having taken over many of the best men, who now are getting good wages. They would not return unless they got more. There have been some blind advertisements in the Boston papers recently for skilled machinists. and these may have had some connection with the proposed plans for resurrecting the Stevens-Duryea car.

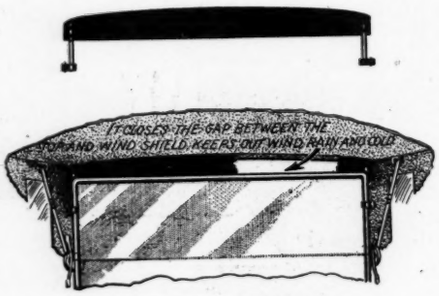
### Mitchell Prices in Show Issue

The prices of the products of the Mitchell-Lewis Motor Co., Racine, Wis., which were given in New York show issue of Motor Age, as being identical for the six and eight-cylinder chassis were incorrect. The correct prices follow: Eight-cylinder, open bodies, three, five and six-passengers, $1,450. Six-cylinder, three and five-passenger, $1,250; seven-passenger, $1,285.

# The Accessory Corner

### Limous'ette for Fords

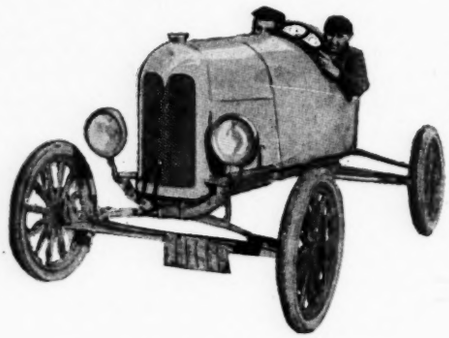
THE LIMOUS'ETTE, brought out by the Lion Buggy Co., Cincinnati, O., gets its name because it fills the space between the windshield and the top, keeping out the rain, wind and cold. With the curtains and top up it does much to convert the car into a limousine. The Limous'ette attaches to the top of the windshield in an instant and can be adjusted to fill the gap. Once put on it remains a part of the windshield as long as it is desired. It does not fasten to the top, so the upper part of the windshield can be turned back without detaching the fitment. It is made especially for adaptation to Ford cars. Material is of imitation patent leather reinforced. The brackets are drop-forged and the price is $1.50.




*Limous'ette for Ford cars*

### Champion Racing Body for Ford Cars

The Champion Racer Co., 121-123 North Crawford avenue, Chicago, is building racing bodies for Fords and also for all other makes of cars. The Champion body for Fords are built along lines similar to the Stutz racers and are so arranged that they may be fitted to the car in about 2 hours.



*Champion racing body for Ford cars*

The complete outfit embodies the body with cowl, dash, floor boards, hood and hood fasteners, undivided front seat, detachable upholstering, tank and tank straps, and nickel and brass trimmings. Any desired color may be had. The radiator is 14 inches wide and 30 inches high. The length of the body from the dash to the rear seats is 50 inches. The seat is 20 inches high and 32 inches wide. Hood, body and tank are of pressed steel and the radiator is of the bridge fin type constructed of copper throughout. Price, $125.

### Kewanee Decarbonizer

The Kewanee Water-Gas Appliance Co., Kewanee, Ill., has brought out the Kewanee decarbonizer, which operates on the steam principle, the steam being sucked into the cylinders with each charge of gas. Since water gas is made of hydrocarbons from the gasoline, this, when mixed in the proper proportions with super-heated steam and air, offers a combustion mixture that will be burned without any carbon being formed, it is said. It also is claimed that the water gas is more explosive, hence the ignition point is lowered.

Water is taken from cooling system through a pipe having in the line a plug attached to the manifold, as will be noted in the illustration. The water is taken through a very small space in the bottom of this plug and there turned into steam, the latter then passing on into the fuel mixture.

*Kewanee decarbonizing device*

Regulation is accomplished from the driver's seat. When the engine is warmed it is said that the device offers the possibility of using kerosene with the other fuel mixture if one so desires. The maker claims that the Kewanee decarbonizer will save from 15 to 25 per cent of the fuel consumption and at the same time increase the horsepower of the motor from 20 to 25 per cent. The price is $12.

### Dover Two-Lite Bulb Case

The Dover Stamping and Mfg. Co., Cambridge, Mass., is marketing a cylindrical steel case intended primarily for Ford headlight bulbs, which holds two, one at each end. The case, shown in this department, measures 7½ by 2¼ inches. The bulbs are held securely by spring-backed bayonet locks and can neither rattle nor come loose. Other cases for other assortments of lamps are made. Price of the one described here is 35 cents without bulbs.

*Dover Two-Lite bulb case*

### New Goodyear Tire for Fords

The Goodyear Tire and Rubber Co., Akron, O., offers a new type of tires for Ford cars. They measure 30 by 3½ inches and both the old and new are shown in section in this department. It will be noted that the new tire, which is just back of the old, is considerably larger. It has about 30 per cent more air capacity. The walls have been greatly strengthened, more rubber put in the tread and a chaffing strip added just above the bead to prevent breaking at that point. The Goodyear company has been making some exhaustive tests with this new tire and states that it has stood up well.

*New and old Goodyear tires for Fords*

### New Redwall Tire

At the top of the opposite page in the center is shown a cross-section of the new 5,000-mile Redwall tire recently announced by the National Rubber Co., Pottstown, Pa. In construction the Redwall tire adheres closely to the accepted and modern standards of tire construction and the manufacturers claim no unusual or novelty features for it, other than good design, material and workmanship.

The tires are built entirely by hand under unusually careful supervision. Square woven Sea Island duck fabric is used in building the carcass and one more ply of this is used than generally is found in the standard construction. In place of a single breaker strip a double breaker is used. The manufacturer claims that this construction, although more expensive, practically eliminates the danger of stone bruises to the tire. Further to protect the carcass against road bruises and blowouts the cushion is built unusually thick and wide, extending under the tread down the

side wall well beyond any possible point of traction.

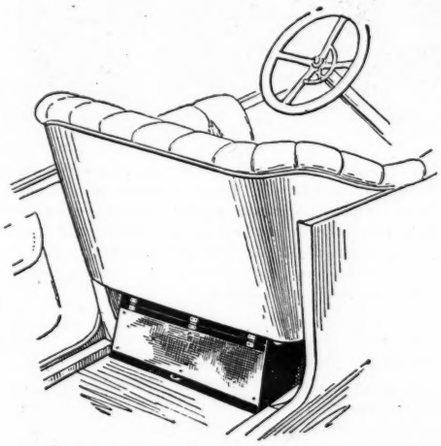
In the regular clincher and quick detachable clincher styles, a fabric bead is used instead of the customary hard or soft rubber bead, the manufacturer claiming that experience has proven the fabric bead to be practically unbreakable, even when the tire is driven flat. In the straight side style, the bead is made of many strands of heavy piano wire imbedded in fabric. The tread is made extra thick and is very tough. The tire can be obtained in all types and sizes and in both plain and non-skid. The open steam wrapped tread process of construction is used throughout. The sides of the tire are red, which gives the name—Redwall.

*National Redwall tire*

**Oakes Side Curtain Carrier**

The Oakes Co., Indianapolis, Ind., is marketing a side curtain carrier and foot rest, which is shown in place in the middle column of this page. This carrier admits the curtains rolled up instead of folding, thus keeping them from becoming cracked as often is the case when they are put under the cushions of the car. The celluloid is kept from breaking and the curtains are much cleaner.

This fitment is made for Ford cars and is of sheet steel, black enameled, with a corrugated aluminum strip on the lid which serves as a foot rest. The hinged lid allows plenty of roo mfor putting in and taking out the curtains. The lid can be pad-locked if desired. Price, $4.



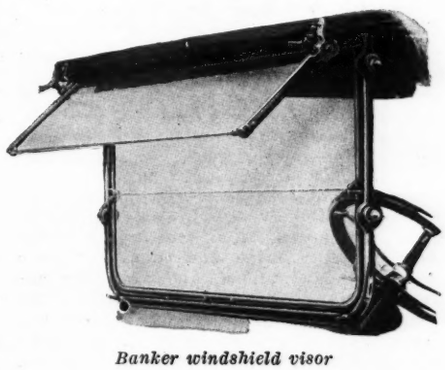
*Oakes side curtain carrier and foot rest*

**Banker Windshield Visor**

A windshield visor under the name Banker, is being marketed by the Banker Wind Shield Co., Pittsburgh, Pa., which is attached to the bow of the top, or roof of a limousine, and when adjusted keeps the rain, snow or mist off the upper glass of the windshield. Friction joints are used, which permit the visor to be easily adjusted to any desired position. It is easily attached and installation is said to be a matter of only a few minutes. When lowering the top of a touring car or roadster, the visor is folded inside the top. It is made to fit any car and with an auxiliary device of this kind car owners will be protected at a nominal expense.

The visor is finished in black enamel and the frame is of steel. The friction joints are operated with wing nuts. The glass is Pittsburgh plate, set in rubber. In ordering the visor the type of car on which it is to be used should be given and the dimensions of the windshield.

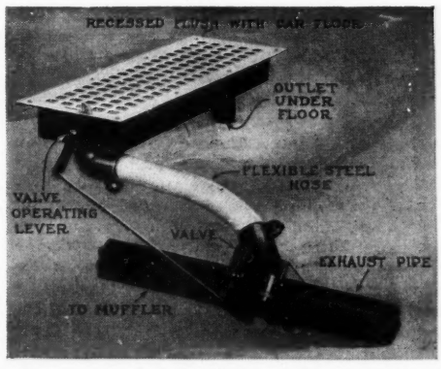
The 10 by 42 inch size sells for $12.50 and the largest size, 12 by 46 inches, at $14.



*Banker windshield visor*

**Re-Ac Exhaust Heater**

A hot air heater has recently been put on the market under the name of Re-Ac, by the Re-Ac Co., Newcastle, Pa. It is a simple device, consisting of a stove for the exhaust pipe, a register permitting a flow of hot air into the car, a hose connecting the tube and a valve for regulating the amount of flow. The hot air stove is readily clamped in position on the exhaust pipe as shown in the illustration, and the register is mounted flush with the floor boards. The valve can be pushed by the toe to any degree of opening desired. The device sells for $10 complete.




*Re-Ac car heater, operating from the exhaust*

**Improvements in Lighting Equipment**

The Wood Mfg. Co., Fairfield, Conn., who is the originator of the Newtype spotlight and the combination mirror and spotlight, has just put on the market a new universal bracket which will fit any windshield, square, round or oblong. For this reason, the dealers and jobbers will not be required to stock a great many different models of brackets.

The Newtype headlights for 1916 will be made so that they can be adjusted at any angle desired on the road and therefore they eliminate the necessity of bending and adjusting the lamp brackets which almost always is necessary to make the lights throw an even, smooth light. The reflectors in these lights will be designed for the latest type nitrogen bulbs and will not throw rings or spots such as most reflectors do; these also will have special dimming features.

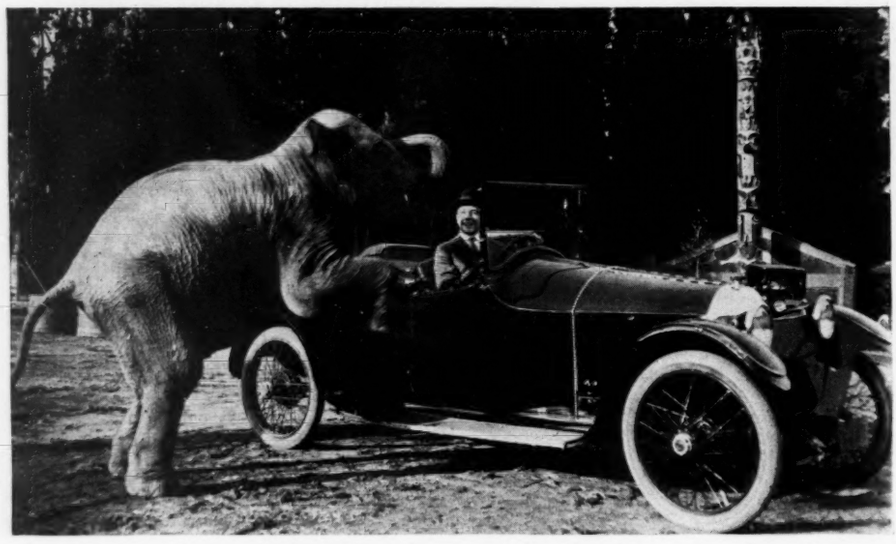
**Pouvailsmith Products**

The Pouvailsmith Corp., Poughkeepsie, N. Y., the formation of which recently was announced, is manufacturing a large line of steering wheels, among which a feature is the warm-hand construction, which has been on the market for several years. This device has been greatly improved to conform with modern car design and to meet the demand for a means of keeping the hands warm in winter and on the chilly evenings characteristic of many months of the year. As now manufactured, the warm-hand wheel consists of a wooden core with the heating coil wound spirally around it and over this is cast condensite under a pressure of 120 tons. All wiring is concealed, coming up the steering column between the rod and casing while an ingenious commutator replaces the ordinary bushing at the top of the steering column, insuring constant electrical connection and preventing any twisting of the wires. Two quadrants of the wheel are heated, where the hands naturally fall on the rim in steering. A simple push switch is used to throw the current on and off, the red end of the button switching it off while the black turns it on. The current consumed is negligible and the device is made for cars with electrical systems of any voltage.

The warm-hand wheels, as well as the ordinary types manufactured by the corporation are furnished in folding form if desired. The folding wheels pivot on the diametrical crossbar, being firmly locked in place except when folded. A trigger-type lock operated by the forefinger renders manipulation easy. A button switch is provided for operating the horn.

The 18-inch, warm-hand steering wheel model G sells for $15 and in the folding design, model H, for $20.

# Among the Makers and Dealers



**BABY ELEPHANT CHOOSES A SCRIPPS-BOOTH**—Anna May is only an elephant in the Los Angeles, Cal., zoo, but she has her likes and dislikes, it is said, much the same as other babies of more tender physique. The Los Angeles Scripps-Booth dealer recently happened to be among a number of others visiting the zoo in motor cars. Spied by the precocious Anna, she threw propriety to the winds and sought to make herself comfortable for a joy ride via the Scripps-Booth roadster, but was admonished by her trainer not to take chances in her tender years with mere motor car salesmen.

**Will Make Trucks**—The Globe Co., Northville, Mich., is said to have made arrangements to start making trucks. A ¾-ton model is to be brought out early in January.

**Owen Retires from Saxon**—Although remaining as a director of the Saxon Motor Car Co., Detroit, Mich., of which he was one of the organizers, Percy Owen has retired from all active service, according to an announcement made by officials of the Saxon company. Mr. Owen had been giving special attention to all matters pertaining to the sales of the company.

**Reorganize Michigan Hearse and Motor**—The Michigan Hearse and Motor Co., Grand Rapids, Mich., has been reorganized. Walter Ioor has been elected president, succeeding Alvah W. Brown. Mark Norris is vice-president, A. C. Chapman is secretary and sales manager and E. W. Aumeal general manager. The factory has been enlarged through a three-story addition, 40 by 100 feet.

**New Lozier to Incorporate**—The Lozier Motor Co., Detroit, Mich., has succeeded to the Associated Lozier Purchasers, which was the name under which the purchasers of the assets of the old Lozier company had incorporated last year. It was stated at the offices of the Lozier company that the reorganized company will be incorporated some time in January and that the capital stock will be between $3,000,000 and $5,000,000.

**Fitzsimmons Adds Finishing Mill**—The Fitzsimmons Steel Products Co., which is the Wisconsin interest of the Fitzsimmons Steel & Iron Co., Chicago, Ill., has broken ground for a new steel finishing mill and power house in the Menominee valley at Milwaukee, Wis. The plant will be used exclusively for the production of cold-drawn steel products. The factory will be 105 by 200 feet on a site 200 by 275 feet, fronting both on the canal and the railroad tracks. Carl and Ernst Prinz, Milwaukee, are among the principal stockholders.

**Hausman Leaves St. Louis Velie**—W. L. Hausman, secretary of the Velie Automobile Co., St. Louis, Mo., has resigned to become associated with Price, Waterhouse & Co., public accountants. Mr. Hausman also has disposed of his stock in the Velie Co.

## The Show Circuit

**Montgomery, Ala., Show**—The Montgomery Automobile and Accessory Dealers' Association, Montgomery, Ala., will hold a motor show, the first large one they ever have given, January 25, 26 and 27. The exhibit will take place in the Klein building.

**Buffalo, N. Y., Show**—The fourteenth annual Buffalo show will be held at the Broadway auditorium January 24 to 29 inclusive, under the auspices of the Automobile Dealers' Association of Buffalo. All the available space in the auditorium has been subscribed for so there is every assurance that this year's exhibition will outrival those of former years not only in the number of models that will be displayed, but in accessory devices also.

**Hartford, Conn., Show**—Every indication points to the complete success of the ninth annual Hartford, Conn., show of the Hartford Automobile Dealers' Association, which will be held in the First Regiment armory February 12 to 19 under the auspices of the regiment and the dealers' association. Over forty-eight different makes of cars already have been provided for in the space allotments. More are to come so that the show this season will be the largest the Hartford dealers have ever given.

**Montgomery With Standard**—G. M. Montgomery, formerly traveling representative for the Bessemer Motor Truck Co., has been appointed eastern traveling representative for the Standard Motor Truck Co., Detroit, Mich.

**Blair Motor Makes Appointments**—The Blair Motor Co., Newark, O., has appointed R. L. Wilkinson general manager of the factory and R. C. Hammond, secretary-treasurer. Mr. Wilkinson has had a number of years' experience with the B. F. Goodrich Co.

**New Wayne Tank Shop**—The Wayne Oil Tank & Pump Co., Fort Wayne, Ind., has moved into a new tank shop just completed to increase the capacity of the plant. The vacated shop will be used for a machine shop and many new machines will be added. The 1915 business was larger than that of 1914.

**Sigwalt Resigns from Federal**—H. T. Sigwalt, who has been advertising manager of the Federal Motor Truck Co., Detroit, Mich., and was with the company for the past year and a half, has resigned. George W. Cushing, editor of the Detroiter, the weekly house organ of the Detroit Board of Commerce, has succeeded him.

**Anderson Branch Managers Meet**—The first annual convention of branch managers and road men of the Anderson Electric Car Co., Detroit, Mich., was held there last week. Those in attendance reported this to have been the biggest year in history for electric passenger cars, while prospects for next year are very encouraging. The Anderson company is planning a greatly increased production for 1916.

**Flowers Goes to Indianapolis**—J. C. Flowers, president of the new Premier Motor Car Co., Indianapolis, Ind., has gone to the Hoosier metropolis to take up his residence and give his personal attention to the interests of the new organization. Announcement of the manufacturing plans are expected soon after the New York show and meanwhile the plant, formerly occupied by T. B. Laycock Co., is being put in shape to take care of a large production of the car finally decided upon.

**Auto Wheel Force Enlarged**—Within the next 2 or 3 weeks additions to the plant of the Auto Wheel Co., Lansing, Mich., will be completed and about 100 more men will be added to the working force, bringing the force up to about 300. Business in 1915 was the best the company ever had and orders now on the books from regular customers will keep the plant busy until August. Recently new buildings were erected and it is said that the company has about 1,000,000 feet of lumber stored.

**Robbins & Myers Insure Employes**—The Robbins & Myers Co., Springfield, O., has announced that a life insurance policy had been taken out by the company for every employe. The policy is paid for by the company and all premiums will be paid as long as the employe is connected with the concern. The amount of the policy increases with the length of time of the employe's service, as follows: 1 year or less, $500; 1 year and under 2, $600; 2 years and under 3, $700; 3 years and under, 4, $800; 4 years and under 5, $900; 5 years and over, $1,000.

# From the Four Winds

**COLLEGE Adds to Course**—Highland Park College, Des Moines, Ia., has broadened the scope of its motor car engineering school by adding work on cranking and lighting systems. All of the principal cranking and lighting systems have been installed in the school shops. W. W. Lemmax is in charge of the new work.

**Prohibition Helps Motor Sales**—Motor car dealers in Oregon and Washington, both of which became dry territory January 1, believe that the move will make for more sales of cars. It is thought that liquor dealers will join the "back to the farm" movement and will count the motor car as chief among their aids to farming.

**Motors Develop New Malady**—Many physicians have been consulted by car drivers concerning a pain in the knee, which is made worse by walking upstairs, or driving motor cars. The doctors call the ailment "the chauffeur's knee." Treatment includes applications of aluminum subacetate of lead and opium and massaging and baking.

**Newsie Lends Father Motor Price**—Tommy Jones, 11 years old, Topeka, Kan., is a newsie magnate. His father, who had been ill, was advised to take up some outdoor occupation. He chose a jitney bus, but did not have sufficient funds to purchase a car. Tommy came to the rescue, giving his father enough of his $630 savings to close the deal.

**Many Cars In Washington**—The registration of motor vehicles in the State of Washington is at present 45,711. The population of the state is approximately 1,150,000, which means that one individual in every twenty-five in the state of Washington is the possessor of a motor vehicle. Of course, this includes commercial vehicles and motorcycles. It is legitimate to include these, however, since the figures are being used to show the widespread adoption of motor-propelled vehicles.

**Motor-Driven Sleigh**—Daniel Riley, Seattle, Wash., has invented a sleigh, driven by an aeroplane motor and propeller and designed for use on frozen trails in Alaska. The machine is said to be capable of traveling at the rate of 65 miles an hour. The inclosed cab will carry six passengers, or 600 pounds of mail. The motor is an 80-horsepower Curtiss aeronautical engine and the 8-foot propeller develops a thrust of 400 pounds. The outfit weighs 1,100 pounds.

**S. D. Licensing Changes**—Several changes are noted in the South Dakota license tag. The fee is $3. Formerly it was $6 per year payable in semi-annual installments. A discount of 50 per cent on the license fee for cars operated 5 years or more has been abandoned. Tags are green and black. Receipts are divided 15 per cent to the state and 85 per cent to the counties, which is divided in turn by the commissioners among the districts according to cars owned in each.

**Iowa Expects 175,000 Cars In 1916**—W. S. Allen, secretary of state and head of the Iowa state vehicle department, predicts a registration of 175,000 cars in Iowa in 1916. The total registered in 1915 was 145,034 as compared with 106,087 in 1914, the gain being 38,937. The total of fees for 1915 registrations collected by the department was $1,393,306.67 in 1915. A total of 7,049 motorcycles were registered during the year. Fees for 1916 registrations are now being received at the rate of $12,000 a day. Total collections of the department for 1915 was approximately $1,500,000 as compared with $1,040,135.54 in 1914. Cars to the number of 25,000 already have been registered for 1916 and that number is 15,000 ahead of the total at the same time last year.

**MAKING THE MOST OF AN OPPORTUNITY—Motor cars were built for pleasure, but they outgrew that narrow channel and have proven a necessity. New uses are found daily and one of the latest to come to public attention is shown above. M. Wibirt, a South Dakota farmer with an old model E. M. F. hauled a 700-pound hay rake from Wessington, S. D., to his farm, a distance of 12 miles. This is but one of many and varied uses the farmer finds for his motor car.**

**Indians Sell Horses; Buy Cars**—Crow Indians in Wyoming are selling their horses to foreign buyers and substituting therefor motor cars. The Indians are getting good money for their horses and since most of them own ten or a dozen head, the price of $135 to $150 apiece nets them enough to buy the gasoline vehicle.

## Coming Motor Events

### SHOWS

**January 13-18—Columbus, O., show.**
**January 17-22—Rochester, N. Y., show.**
**January 17-22—Wilmington, Del., show.**
**January 18-22—Baltimore, Md., show.**
**January 18-22—Lancaster, Pa., show.**
**January 22-29—Montreal, Que., show.**
**January 22-29—Chicago show.**
**January 24-29—Portland, Ore., show.**
**January 24-29—Buffalo, N. Y., show.**
**January 25-27—Montgomery, Ala., show.**
**January 29-Feb. 5—Columbus, O., show.**
**January 29-Feb. 5—Minneapolis, Minn., show.**
**February 1-5—York, Pa., show.**
**February 7-12—Kansas City, Mo., show.**
**Februarv 9-12—Peoria, Ill., show.**
**February 12-19—Hartford, Conn., show.**
**February 14-19—Des Moines, Ia., show.**
**February 20-27—Grand Rapids, Mich., show.**
**February 21-26—Louisville, Ky., show.**
**February 21-26—Omaha, Neb., show.**
**February 21 26—Syracuse, N. Y., show.**
**February 29-March 4—Sioux City, Ia., show.**
**February 29-March 4 — Fort Dodge, Ia., show.**
**March 4-11—Boston show.**
**March 8-11—Davenport-Rock Island-Moline show.**
**March 8-11—Mason City, Ia., show.**
**March 9-11—Kenosha, Wis., show.**
**March 21-25—Deadwood, S. D., show.**
**April 10-17—Seattle, Wash., show.**

### CONTESTS

**May 13—New Yory City, Sheepshead Bay speedway race.**
**May 30—Indianapolis speedway race.**
**June 10—Chicago speedway race.**
**June 28—Des Moines, Ia., speedway race.**
**July 4—Minneapolis speedway race.**
**July 4—Sioux City speedway race.**
**July 15—Omaha, Neb., speedway race.**
**August 5—Tacoma speedway race.**
**August 18-19—Elgin road race.**
**September 15—Indianapolis speedway race.**
**September 30—New York City, Sheepshead Bay speedway race.**
**October 7—Omaha speedway race.**
**October 14—Chicago speedway race.**

**Ice Motoring Jersey Sport**—Motorists of Netcong, N. J., have found the ice on Lake Musconetcong ideal for driving and are out every night with the skaters. Skids or runners are clamped on the front wheels and some remarkable speed has been shown.

**Arm Broken; Drives Car**—Driving a big car with his right arm broken and dangling on the back of the seat, a 19-year-old boy pulled into Guyton, Ga., a few days ago, after having driven with his left hand a distance of 30 miles. His arm was broken when the starting crank flew back.

**Mile a Minute to Save Dog**—Anthony Bryson drove a motor car 40 miles in 40 minutes over frozen country roads in Minnesota to save his dog and cat from fire. His home on Elk river took fire while he was away. He was notified by telephone and the race begun. He arrived too late to save his home but rescued his pets.

**Kansas Car to Family Ratio 1 to 4**—Final figures for the motor registration in the state of Kansas for 1915 show a total of 74,123 vehicles, of which about 4,000 are trucks and 8,260 motorcycles. This means there is a motor car for practically every fourth family in the state, a record Kansas believes is not to be equaled anywhere. The licenses for these cars turned $331,812.75 into the road maintenance funds of the various counties during the year just ended. Sedgwick County leads in the number of cars with 4,029 registered.

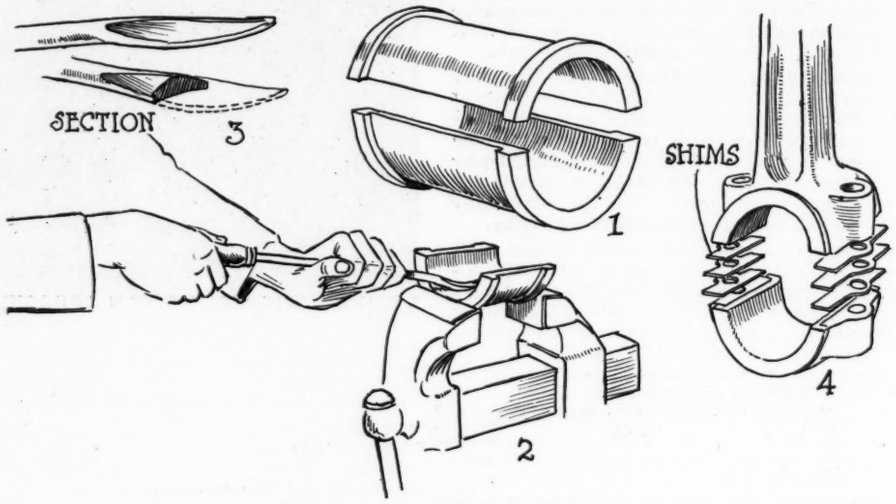
**Ontario Raises License Fees**—The proposed increase in fees for motor licenses in Ontario will be fairly heavy, particularly in the cases of the minimum 25-horsepower cars, and small truck carrying 2 tons and less. The former, it is understood, will be increased from $6 to $10 and the small truck, which now pays $5 in taxes, probably will be called upon to pay double that amount. Between 25 and 35-horsepower the probability is that the $10 license fee will be raised to $15 and cars from 35-horsepower to 50 pay $25 instead of $20. Over 50-horsepower it is proposed to raise the rate from $25 to $30. Trucks carrying over 2 tons will pay $5 for each ton or fraction of a ton.

# The Motor Car Repair Shop

## Taking Up Wear in Motor Bearings

ONE of the main things to do when overhauling a motor is to take up the wear in the bearings and adjust them properly. Like many of the other special jobs on a car, that of bearing adjustment and repair is one that is not recommended as a pastime for the man who knows very little about a car or things mechanical, but it is work that the amateur repair man can do providing he is at least mechanically inclined and is reasonably skillful with tools.

When there has been a scarcity of oil in the bearings they are apt to burn, and then there is a natural wear that must be taken up periodically — perhaps once a year when the engine is overhauled. Sometimes the babbitt is so badly worn or scored that it must be replaced, and under average circumstances, the same liners can be used after they have been scraped and smoothed again.




CARING FOR ENGINE BEARINGS

*1—Ordinary split bushing; 2—Scraping the bearing; 3—Form of scraper; 4—How shims are used*

Whether it is a new liner or one that has been used, the method of scraping is the same. Scraping is work of a tedious and troublesome character, and requires a great deal of patience if you would do a good job. Reasonably satisfactory surfaces can be given the liners with some skill and by following these directions.

Having dismantled the engine, the bushings should be opened and both the shaft and the two halves of the bushing inside covered with chalk, or better still, painted with a thin coating of Prussian blue solution obtained by dissolving the material in water. Then let this dry, and clamp the two halves together again. Revolve the shaft a few times and again take the bushing apart, when you will see that the blue paint has been rubbed off those parts of the inner surface of the bush that are high or rough. This gives you something to work on, and you are now ready to clamp the bushing in a vice and begin the delicate scraping.

**Scraping Bearings**

Fig. 1 shows the ordinary form of split bushing being used in motor car engines, and Fig. 2 indicates the method of doing the work. The scraper is a special tool having a working end of some such form as that in Fig. 3 and it can be procured at any good motor car supply store. However, if you cannot obtain one, such a tool can be made without a great deal of trouble from an old file which originally had a half-round form. A grinding wheel must be brought into service to make it, however.

Grasp the scraper as Fig. 2 shows and delicately scrape down the spots from which the paint has been removed. This done to the best of your ability, again replace the half on the shaft and clamp together, after having again completely coated the surface with the Prussian blue. Rotating the shaft will reveal other bright spots where the paint has come off and these must be scraped.

**Repeat Operation Several Times**

The operation must be repeated until finally the blue rubs off smoothly all over the bushing, indicating that the surface is smooth. A skilled man takes an hour or more to do one bearing satisfactorily, so the novice should not become discouraged if the job seems hopeless at first. It would probably be well to practice using the scraper on an old bearing before attempting to do the work on the good ones, if this is your first experience at it. Of course, it is not necessary to have a very perfect surface to work well, providing the bearing fits well to its shaft, but the better the surface the better the resulting operation of the engine.

Shims are provided between the caps and supports of most engine bearings, so after the scraping it is essential correctly to fit each bearing to its position. The shims are applied not only to the main bearings but to the connecting-rod ends as well, and as they are of varying thicknesses, usually, the correct number or thickness of them can be removed or put in to take up the desired amount. Fig. 4 is a sketch of the end of a connecting-rod with cap open to show the shims. Sometimes when there is a knock in a bearing, it is not necessary to go through the laborious process of scraping, as it is smooth and only needs adjustment or taking up of the wear. Then the process is to take out one very thin shim from each side of the cap and put the whole thing back together again. If there is still play after the cap is drawn up to the proper degree of snugness, then more shims must be removed until the correct fitting is made. Be sure to take the same number or thickness of shims from both sides, or if you are putting some in, make sure that both sides get the same thickness, otherwise disastrous results will follow. When it is realized that the shims usually vary in thickness from .002 to .005 inch, the delicate nature of such adjusting work becomes very apparent. Having assured yourself that all bearings are properly smoothed and fitted, do not forget to put the cotter pins in the heads of the castellated nuts to lock them securely before going any further with the reassembly of the engine.

**Fitting New Bushings**

In fitting a new bushing to the upper end of a connecting-rod remember that it is usually intended that it be a driving or press fit, although in some designs a split upper end is used, in which case the clamping bolt should be loosened enough to put in the bush or take out an old one. If you intend to use the bushing again never drive it out with a piece of steel or cold chisel, as is often erroneously done. This tends to swell it and get it out of shape. The best way is to either force it out on a press by using a piece of hard wood, or drive it out with a piece of wood. Don't use a hard metal on the bushing.

To fit a new bushing properly, a reamer will have to be brought into play to size the hole to the proper diameter. Ofter the rod has its bearing in the bosses of the piston, and the bushings in this case are press fits also.